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S1	977401	S SPINE OR SPINAL OR VERTEBRA? ?
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S3	7853	S ACCESS() (DEVICE? ? OR INSTRUMENT? ? OR APPARATUS? ? OR ASSEMBLY OR ASSEMBLIES OR CONDUIT? ? OR CANNULA? ?) OR INTRODUCER? ?
S4	977468	S INCLINE OR INCLINES OR INCLINED OR INCLINING OR TILT OR TILTS OR TILTED OR TILTING OR SLANT OR SLANTS OR SLANTED OR SLANTING OR tip OR tipS OR tipPED OR tipPING OR BEND OR BENDS OR BENT OR BENDING OR DEVIAT???(2W) ("FROM") (1W) (PERPENDICULAR OR VERTICAL)
S5	1393380	S SLOPE OR SLOPES OR SLOPED OR SLOPING OR angle OR angleS OR angled OR angling
S6	3676859	S DEGREE OR DEGREES
S7	95	S S3(2N)S4:S5
S8	0	S S1 AND S2 AND S7
S9	3754	S S1 AND S2
S10	816	S S3(S)S4:S6
S11	0	S S9 AND S10
S12	66	S S1 AND S10
S13	35	RD (unique items)
S14	4	S S13/2004:2005
S15	5	S S13/2006:2008
S16	26	S S13 NOT S14:S15
S17	26	SORT S16/ALL/PY,A

17/7/20 (Item 20 from file: 155)

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14823676 PMID: 12358959

The effect of introducer gauge, design and bevel direction on the deflection of spinal needles.

Ahn W-S; Bahk J-H; Lim Y-J; Kim Y-C

Department of Anaesthesiology and Clinical Research Institute, University Hospital, Seoul National University College of Medicine, Seoul, Korea.

Anaesthesia (England) Oct 2002 , 57 (10) p1007-11 , ISSN: 0003-2409--Print

Journal Code: 0370524

Publishing Model Print

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: MEDLINE; Completed

This study was performed to determine how the use of an introducer affects the extent to which a needle deflects during a spinal or combined spinal-epidural injection. A polystyrene block was used to simulate the paraspinal area of the back. A line was drawn perpendicular to the edge of the block to use as a guide and to measure the deflection. The use of an introducer needle decreased the deflection in all the bevelled needles ($p < 0.001$). Depending on the direction of both the bevels, the deflection decreased as the introducer bevel was changed from the same direction, to right-angles to bevel direction and then to a direction opposite to that of the spinal needle ($p < 0.05$). Deflection was decreased when a thick introducer was used ($p < 0.001$). The use of an introducer increased the deflection of the pencil-point needle only in the deflection direction of the introducer ($p < 0.001$). The 18-gauge Tuohy needle with a "backhole" deflected more than the corresponding needle without a backhole ($p < 0.001$), and the spinal needle inserted through the Tuohy needle with a backhole deflected more ($p = 0.002$). Besides the tip type and gauge, the deflection of a spinal needle depends upon the use of introducer, its gauge and bevel direction. The deflection of a Tuohy needle depends upon its design, gauge and the presence of a backhole.

Record Date Created: 20021002

Record Date Completed: 20021118

17/7/21 (Item 21 from file: 8)

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09540980 E.I. No: EIP03407652978

Title: Evaluation of cadaveric lumbar spine temperature distributions during nucleoplasty

Author: Nau, William H.; Diederich, Chris J.

Corporate Source: Thermal Therapy Research Group Department of Radiation Oncology

University of California, SF, San Francisco, CA, United States

Conference Title: Thermal treatment of Tissue:Energy Delivery and Assessment II

Conference Location: San Jose,CA, United States Conference Date: 20030126-20030127

Sponsor: SPIE-The International Society for Optical Engineering

E.I. Conference No.: 61493

Source: Proceedings of SPIE - The International Society for Optical Engineering v 4954

2003. p 89-94

Publication Year: 2003

CODEN: PSISDG ISSN: 0277-786X

Language: English

Document Type: CA; (Conference Article) Treatment: T; (Theoretical); X; (Experimental)

Journal Announcement: 0310W1

Abstract: This study investigated the effects of applied thermal energy during the nucleoplasty procedure by obtaining temperature maps throughout human cadaveric disc specimens ($n = 5$) during a simulated treatment protocol. The procedure was performed using the ArthroCare SpineWand RF-Coblation registered trademark device inserted through a 17 g needle into the cadaveric disc. The device uses a dual mode heating technique which employs a high voltage radio frequency (RF) plasma field to vaporize tissue, followed by RF current heating for thermal coagulation. The device is manipulated to create a series of 6 channels at a 60 degree angular spacing within a period of 3 minutes. A computer-controlled, motorized translational system was used to mimic the insertion (Coblation registered trademark) and retraction (rf-coagulation) performed

during clinical implementation. Rotation was performed manually between each Coblation registered trademark /rf-coagulation cycle. Transient temperature data were obtained using five multi-junction thermocouple probes (5 to 6- 0.05 mm diameter junctions spaced at either 2 or 5 mm) spaced throughout the desired heating volume. Temperature distributions and accumulated thermal doses calculated from the temperature-time history were used to define probable regions of thermal coagulation. Intra-discal temperatures of 60-65 degree C were measured within 2 to 3 mm radial distance from the introducer with therapeutic thermal doses of greater than 250 EM//4//3//C achieved at radial distances of up to 5 mm from the introducer. Although appreciable regions of thermal coagulation within the nucleus are localized around the applicator, improper placement of the applicator during treatment may also generate undesirable hot spots in the bone endplate.

2 Refs.

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S1	777487	S (ACCESS OR INSERTER? ? OR CANNULA? ?) NOT (ACCESS() (DEVICE? ? OR INSTRUMENT? ? OR APPARATUS? ? OR ASSEMBLY OR ASSEMBLIES OR CONDUIT? ? OR CANNULA? ?) OR INTRODUCER? ?)
S2	977401	S SPINE OR SPINAL OR VERTEBRA? ?
S3	61846	S MINIMALLY() INVASIVE OR (KEYHOLE OR NONINVASIVE OR NON() INVASIVE OR MINIMAL OR MINIMAL() ACCESS) () (SURGERY OR SURGICAL() PROCEDURE? ?)
S4	636255	S INCLINE OR INCLINES OR INCLINED OR INCLINING OR TILT OR TILTS OR TILTED OR TILTING OR SLANT OR SLANTS OR SLANTED OR SLANTING OR TIPPED OR TIPPING OR BEND OR BENDS OR BENT OR BENDING OR DEVIAT??? (2W) ("FROM") (1W) (PERPENDICULAR OR VERTICAL)
S5	1393380	S SLOPE OR SLOPES OR SLOPED OR SLOPING OR ANGLE OR ANGLES OR ANGLED OR ANGLING
S6	3676859	S DEGREE OR DEGREES
S7	5049	S S1(10N) S4:S6
S8	6	S S2 AND S3 AND S7
S9	4	RD (unique items)
S10	44	S S1(S) S4:S6 AND S2 AND S3
S11	38	S S10 NOT S8
S12	21	RD (unique items)
S13	9	S S12/2004:2006
S14	5	S S12/2007:2008
S15	7	S S12 NOT S13:S14
S16	7	SORT S15/ALL/PY,A

9/7/1 (Item 1 from file: 155)

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13547987 PMID: 10766057

Synframe: a preliminary report.

Aebi M; Steffen T

Division of Orthopaedic Surgery, McGill University, Montreal (QC), Canada.

maebi@orl.mcgill.ca

European spine journal - official publication of the European Spine Society, the European Spinal Deformity Society, and the European Section of the Cervical Spine Research Society

(GERMANY) Feb 2000 , 9 Suppl 1 pS44-50 , ISSN: 0940-6719--Print Journal Code: 9301980

Publishing Model Print

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: MEDLINE; Completed

Both endoscopic lumbar spinal surgery and the non-standardized and unstable retractor systems for the lumbar spine presently on the market have disadvantages and limitations in relation to the minimally invasive surgical concept, which have been gradually recognized in the last few years. In an attempt to resolve some of these issues, we have developed a highly versatile retractor system, which allows access to and surgery at the lumbar, thoracic and even cervical spine. This retractor system - Synframe - is based on a ring concept allowing 360 degrees access to a surgical opening in anterior as well as posterior surgery. The ring is concentrically laid over the surgical opening for the approach and is used as a carrier for retractor arms, which are instrumented with either different sizes or types of blades and/or different sizes of Hohmann hooks. In posterior surgery, nerve root retractors can also be installed. This ring also functions as a carrier for fiberoptic illumination devices and different sizes of endoscopes, used to transmit the surgical procedure out of the depth of the surgical exposure for both teaching purposes and for the surgical team when it has no longer direct visual access to the procedure. The ring is stable, being fixed onto the operating table, allowing precise minimally open approaches and surgical procedures under direct vision with optimal illumination. This ring system also opens perspectives for an integrated minimally open surgical concept, where the ring may be used as a reference platform in computer-navigated surgery.

Record Date Created: 20000502

Record Date Completed: 20000502

9/7/2 (Item 2 from file: 155)

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12710113 PMID: 9637618

Endoscopic transforaminal lumbar discectomy and reconfiguration: a postero-lateral approach into the spinal canal.

Ditsworth D A

Division of Neurosurgery, Cedars-Sinai Medical Center, Los Angeles, California, USA.

Surgical neurology (UNITED STATES) Jun 1998 , 49 (6) p588-97; discussion 597-8 ,

ISSN: 0090-3019--Print Journal Code: 0367070

Publishing Model Print

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: MEDLINE; Completed

BACKGROUND: In the past, minimally invasive procedures (chemonucleolysis, laser, automated percutaneous discectomy, percutaneous manual nucleotomy, arthroscopy) have been largely confined to intradiscal work. This study represents cases of working channel, transforaminal spinal endoscopy performed using an endoscope which, because of its small size and flexibility, can bend up to 90 degrees (depending on the guiding cannula), and pass completely through the foramen into the spinal canal (truly transforaminal, as opposed to just going through part of the foramen and into the disc), to directly remove free fragments and reconfigure disc, relieving root and dural displacement at all lumbar levels. METHODS: The records of 533 patients who had outpatient, minimally invasive operations performed over a 6-year period (ending in 1995) by this author were analyzed. Of these, 110 had small scope transforaminal procedures, forming the basis of this study.

RESULTS: An independent observer followed the 110 patients who had endoscopic transforaminal procedures for 2 or more years. Using MacNab's criteria, the success rate (excellent or good) was 95% in the 75 patients with disc presenting lateral to the dura-"lateral presenting,"-and 83% in the 35 patients not presenting disc for direct removal-"non-lateral presenting" (i.e., dura in the pathway)-making an overall success rate of 91%. One patient who developed discitis was the only complication. CONCLUSION: Guideable endoscopes small enough to pass completely through the foramen allow percutaneous surgery to include non-contained disc herniations and even some migrated free fragments, depending on the location. The percutaneous transforaminal endoscopic technique can be an effective, safe approach for disc removal through the foramen, especially in cases where the disc presents itself for direct removal.

Record Date Created: 19980701

Record Date Completed: 19980701

16/7/3 (Item 3 from file: 155)

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13547988 PMID: 10766058

Minimally invasive 360 degrees instrumented lumbar fusion.

Thalgott J S; Chin A K; Ameriks J A; Jordan F T; Giuffre J M; Fritts K; Timlin M
International Spinal Development and Research Foundation, Las Vegas, NV 89106, USA.
spine@spine-research.org

European spine journal - official publication of the European Spine Society, the European Spinal Deformity Society, and the European Section of the Cervical Spine Research Society (GERMANY) Feb 2000 , 9 Suppl 1 pS51-6 , ISSN: 0940-6719--Print Journal Code: 9301980

Publishing Model Print

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: MEDLINE; Completed

A retrospective preliminary study was undertaken of combined minimally invasive instrumented lumbar fusion utilizing the BERG (balloon-assisted endoscopic retroperitoneal gasless) approach anteriorly, and a posterior small-incision approach with translaminar screw fixation and posterolateral fusion. The study aimed to quantify the clinical and radiological results using this combined technique. The traditional minimally invasive approach to the anterior lumbar spine involves gas insufflation and provides reliable access only to L5-S1 and in some cases L4-5. A gas-mediated approach yields many technical drawbacks to performing spinal surgery. A minimally invasive posterior approach involving suprafascial pedicle screw instrumentation has been developed, but without wide-spread use. Translaminar facet fixation may be a viable alternative to transpedicular fixation in a 360 degrees instrumented fusion model. Past studies have shown open 360 degrees instrumented lumbar fusion yields high arthrodesis rates. The study examined the cases of 46 patients who underwent successful 360 degrees instrumented lumbar fusion using a combined minimally invasive approach. Anterior lumbar interbody fusion (ALIF) at one or two levels was performed through the BERG approach; a gasless retroperitoneal approach to the lumbar spine allowing the use of standard anterior instrumentation. Posteriorly, all patients underwent successful decompression, translaminar fixation, and posterolateral fusion at one or two levels through one small (2.5-5.0 cm) incision. Results showed mean hospital stay of 2.02 days; mean combined blood loss was 255 cc; and mean pain relief was 56%, with 75.5% of patients reporting good, excellent, or total pain relief. Forty-two of 46 patients (93.2%) achieved a solid fusion 24 months after surgery. A total of 47% of all patients working prior to surgery returned to work following surgery. The study showed that minimally invasive 360 degrees instrumented lumbar fusion, when performed utilizing these approaches, yields a high rate

of solid arthrodesis (93.3%), good pain relief, short hospital stays, low blood losses, accelerated rehabilitation, and a quick return to the workforce. The BERG approach offers technical advantages over the traditional gas-mediated laparoscopic approach to the anterior lumbar spine.

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Record Date Completed: 20000502

16/7/5 (Item 5 from file: 8)

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09614949 E.I. No: EIP03477733409

Title: Thermo/mechanical design, modeling, & testing of shape memory actuated minimal & micro invasive probe systems

Author: Wulfman, David R.; Erdman, Arthur G.; Strykowski, Paul J.

Conference Title: 2002 ASME International Mechanical Engineering Congress and Exposition

Conference Location: New Orleans, LA, United States Conference Date: 20021111-20021117

Sponsor: Aerospace Division, ASME

E.I. Conference No.: 61785

Source: American Society of Mechanical Engineers, Aerospace Division (Publication) AD v 67 2002. p 279-283

Publication Year: 2002

CODEN: ASADD4 ISSN: 0733-4230

Language: English

Document Type: CA; (Conference Article) Treatment: T; (Theoretical); X; (Experimental)

Journal Announcement: 0311W4

Abstract: Small scale probes implementing shape memory alloy (SMA) actuation show great promise in applications requiring remote and minimally invasive access to small environments. Such environments include physiological spaces like those located in human and animal bodies as well as cavities within mechanical systems. Probes examined here are generally snake like in appearance composed of one or multiple independent segments, which in turn are made up of one or multiple SMA actuators performing work against an elastic spine. As the actuator(s) of a given segment are activated, the spine bends causing the probe to bend in the area of that segment. When the actuator(s) are deactivated, the force generated in the bending of the spine returns the segment to its neutral position. Activation and deactivation of actuators is accomplished by heating and cooling respectively, enacting the solid phase changes that are characteristic to the shape memory effect. The gage of control over probe shape depends on the number of independent segments that are available per unit length and the degree of control an operator has over each of the segments. The work presented here discusses the constraints imposed on the design of SMA actuated probes, and how those constraints become more critical and limiting with reduced physical scale and refinement of motion control. Numerical and finite element models have been developed showing the interrelationship between mechanical design, the thermal and phase states of the SMA actuator(s), and the mechanical performance of the total system. Performance concerns examined include probe shape control and the limits of shape change as a function of physical scale. Comparative data is presented between behavior predicted by the models developed and performance observed during the testing of prototypes. It is concluded that segment length, linked to refinement of probe control, is limited by its thermal boundary conditions. 13 Refs.

16/7/6 (Item 6 from file: 155)

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14802039 PMID: 12234445

Minimally invasive percutaneous posterior lumbar interbody fusion.

Khoo Larry T; Palmer Sylvain; Laich Daniel T; Fessler Richard G

Institute for Spine Care, Chicago Institute of Neurosurgery and Neuroresearch, Rush Presbyterian Medical Center, Chicago, Illinois, USA.

Neurosurgery (United States) Nov 2002 , 51 (5 Suppl) pS166-1 , ISSN: 0148-396X--
Print Journal Code: 7802914

Publishing Model Print; Comment in Neurosurgery. 2003 Jun;52(6) 1512; Comment in PMID
12800846

Document type: Journal Article; Research Support, Non-U.S. Gov't

Languages: ENGLISH

Main Citation Owner: NLM

Record type: MEDLINE; Completed

OBJECTIVE: The wide exposure required for a standard posterior lumbar interbody fusion (PLIF) can cause unnecessary trauma to the lumbar musculoligamentous complex. By combining existing microendoscopic, percutaneous instrumentation and interbody technologies, a novel, minimally invasive, percutaneous PLIF technique was developed to minimize such iatrogenic tissue injury (MIP-PLIF). **METHODS:** The MIP-PLIF technique was validated in three cadaveric torsos with six motion segments decompressed and fused. Preoperative variables measured from imaging included interpedicular distance, pedicular height and width, interspinous distance, lordosis, intervertebral height, Cobb angle, and foraminal height and volume. Using the METRx and MD spinal access systems (Medtronic Sofamor Danek, Memphis, TN), bilateral laminotomies were performed using a hybrid of microsurgical and microendoscopic techniques. The intervertebral disc spaces were then distracted and prepared with the Tangent (Medtronic Sofamor Danek) interbody instruments. Either a 10 or 12 by 22 mm interbody graft was then placed. Using the Sextant (Medtronic Sofamor Danek) system, percutaneous pedicle screw-rod fixation of the motion segment was completed. We then applied MIP-PLIF in three patients. **RESULTS:** For segments with preoperative intervertebral/foraminal height loss, MIP-PLIF was effective in restoring both heights in all cases. The amount of improvement (9.7 to 38% disc height increase; 7.7 to 29.9% foraminal height increase) varied directly with the size of the graft used and the original degree of disc and foraminal height loss. Segmental lordosis improved by 29% on average. Graft and screw placement was accurate in the cadavers, except for a single Grade 1 screw violation of one pedicle. The average operative time was 3.5 hours per level. In our three clinical cases, the MIP-PLIF procedure required a mean of 5.4 hours, estimated blood loss was 185 ml, and inpatient stay was 2.8 days, with no intravenous narcotic use after 2 days in any of the patients. All screw and graft placements were confirmed. **CONCLUSION:** A complete PLIF procedure can be safely and effectively performed using minimally invasive techniques, thereby potentially reducing the pain and morbidity associated with standard open surgery. Prospective, randomized outcome studies will be required to validate the efficacy of this exciting new surgical technique.

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Record Date Completed: 20021204

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S3	40140	S ACCESS()(DEVICE? ? OR INSTRUMENT? ? OR APPARATUS? ? OR ASSEMBLY OR ASSEMBLIES OR CONDUIT? ? OR CANNULA? ?) OR INTRODUCER? ?
S4	1155794	S INCLINE OR INCLINES OR INCLINED OR INCLINING OR TILT OR TILTS OR TILTED OR TILTING OR SLANT OR SLANTS OR SLANTED OR SLANTING OR tip OR tipS OR tipped OR tipping OR BEND OR BENDS OR BENT OR BENDING OR DEVIAT??? (2W) ("FROM") (1W) (PERPENDICULAR OR VERTICAL)
S5	405791	S SLOPE OR SLOPES OR SLOPED OR SLOPING OR angle OR angleS OR angled OR angling
S6	1780744	S DEGREE OR DEGREES
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S8	34	S S3(2N)S4:S5
S9	0	S S7(S)S8
S10	1	S S1(S)S8
S11	0	S S3(S)S4:S6(S)S7

10/3,K/1 (Item 1 from file: 135)

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0000038588 (USE FORMAT 7 OR 9 FOR FULLTEXT)

"Somatic Referred Pain Patterns Resulting from Direct in Vivo Intradiscal Thermal Stimulation."

Pain & Central Nervous System Week, March 15, 1999, p.11-12

DOCUMENT TYPE: Research News LANGUAGE: English

RECORD TYPE: FULLTEXT

Word Count: 1029

TEXT: According to an abstract submitted by the authors to the Combined Meeting of the International Spinal Injection Society and the

Australasian Faculty of Musculoskeletal Medicine, held September 26-27, 1998, in Sydney, Australia, "Introduction: Confusion and controversy abound as to the...

...pain is the outer layer of the annulus fibrosus and posterior longitudinal ligament. The McKenzie Method demonstrates that during mechanical assessment involving repeated end-range spinal test movements, concordant pain may be centralized or peripheralized at will. The mechanism underpinning the centralization phenomenon is theorized as being a beneficial shifting of...

...peripheralization phenomenon, as intradiscal stimulation was increased incrementally. Study Design: The current work was a prospective in vivo study of pain reproduction in the human spine. Method and Materials: From 5/97 to 4/98, 60 discs in 48 patients were heated utilizing the Intradiscal Electrothermal Annuloplasty procedure, with a view...

...30cm SPINECath catheter, with a 6cm active electrothermal tip. Utilizing normal discographic technique, the catheter is inserted anteriorly into the annulus via a 17-gauge introducer. The active tip is typically advanced anterior-laterally inside the annular tissue, and is directed circuitously to return posteriorly, ideally achieving 180-circumfusing of the disc pathology. A...

...in proportion to the intensity of the discogenic stimulus." (Authors) R. Derby, B.C.J. Eek, P.K. Van Peteghem and D.P. Ryan. (Institution) Spinal Diagnostics and Treatment Center, Daly City, California.

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Set	Items	Description
S1	5134905	S (ACCESS OR INSERTER? ? OR CANNULA? ?) NOT (ACCESS() (DEVICE? ? OR INSTRUMENT? ? OR APPARATUS? ? OR ASSEMBLY OR ASSEMBLIES OR CONDUIT? ? OR CANNULA? ?) OR INTRODUCER? ?)
S2	136100	S SPINE OR SPINAL OR VERTEBRA? ?
S3	51363	S MINIMALLY() INVASIVE OR (KEYHOLE OR NONINVASIVE OR NON() INVASIVE OR MINIMAL OR MINIMAL() ACCESS) () (SURGERY OR SURGICAL() PROCEDURE? ?)
S4	18466	S S1 AND S2
S5	1390	S INCLINE OR INCLINES OR INCLINED OR INCLINING OR TILT OR TILTS OR TILTED OR TILTING OR SLANT OR SLANTS OR SLANTED OR SLANTING OR TIPPED OR TIPPING OR BEND OR BENDS OR BENT OR BENDING OR DEVIAT??? (2W) ("FROM") (1W) (PERPENDICULAR OR VERTICAL)
S6	1152	S SLOPE OR SLOPES OR SLOPED OR SLOPING OR ANGLE OR ANGLES OR ANGLED OR ANGLING
S7	3238	S DEGREE OR DEGREES
S8	1191	S S2(S) S3
S9	194	S S1(10N) S5:S7
S10	5	S S8(S) S9
S11	3	RD (unique items)

11/3,K/2 (Item 2 from file: 16)

Gale Group PROMT(R)

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11176575 Supplier Number: 116149725 (USE FORMAT 7 FOR FULLTEXT)

Medtronic Announces Minimally invasive Alternative to Conventional Lumbar Spinal Fusion Techniques.

Business Wire , p 5612

May 3 , 2004

Language: English Record Type: Fulltext

Document Type: Newswire ; Trade

Word Count: 695

...R) ADVANCE Instrument Set in combination with the CD HORIZON(R)

SEXTANT(TM) and METRx(TM) Spinal Systems. These compatible surgical instruments allow surgeons to access the spine from many different angles in a manner that combines the reliability of conventional open surgery with the advantages of a minimally invasive technique.

Patients who suffer from chronic back and/or leg pain are potential candidates for the VLIF procedure. The causes of their pain may range...

11/7/3 (Item 1 from file: 441)

ESPICOM Pharm&Med DEVICE NEWS

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00070686 00074842 (THIS IS THE FULLTEXT)

Medtronic unveils VLIF technique for lumbar spine surgery

Orthopaedics Business

4 May 2004 (20040504)

Record Type: FULLTEXT Word Count: 293

Text:

Medtronic has unveiled the latest advancement in the company's line of Minimal Access Spinal Technologies (MAST), which offer surgeons the ability to treat conditions of the lumbar spine using less-invasive techniques. The Versatile Lumbar Interbody Fixation (VLIF) technique, optimises the traditional surgical procedure used to approach the spine from the side or at an angle. The VLIF technique allows surgeons to operate with much smaller incisions, more precision and less damage to the surrounding soft tissue. These muscle-sparing techniques can mean less postoperative pain and a quicker recovery time for patients when compared with open procedures. An open approach has traditionally been used to perform spinal fusion procedures, which involves making an incision along the middle of the back, stripping back muscles from the spine and retracting the muscles to each side of the opening so that surgeons can view the spine and easily access the vertebrae for instrument implantation.

The VLIF technique incorporates use of the new Pyrametrix Advance instrument set in combination with the CD Horizon Sextant and METRx spinal systems. These compatible surgical instruments allow surgeons to access the spine from many different angles in a manner that combines the reliability of conventional open surgery with the advantages of a minimally-invasive technique. Patients who suffer from chronic back and/or leg pain are potential candidates for the VLIF procedure. The causes of their pain may range from a natural degeneration of the disc space to some type of traumatic event.

Introduced in 2000, the CD Horizon Sextant spinal system uses an arc device to deliver screws and rods for spinal fusion. The METRx system provides tissue-sparing access to the spine, while the Pyrametrix Advance instrument set consists of a wide range of surgical instruments designed specifically for performing the VLIF technique.

Company: Medtronic

[File 350] Derwent WPIX 1963-2008/UD=200849
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[File 347] JAPIO Dec 1976-2007/Dec(Updated 080328)
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Set	Items	Description
S1	38423	S SPINE OR SPINAL OR VERTEBRA? ?
S2	4320	S MINIMALLY()INVASIVE OR (KEYHOLE OR NONINVASIVE OR NON()INVASIVE OR MINIMAL OR MINIMAL()ACCESS)() (SURGERY OR SURGICAL()PROCEDURE? ?)
S3	17199	S ACCESS() (DEVICE? ? OR INSTRUMENT? ? OR APPARATUS? ? OR ASSEMBLY OR ASSEMBLIES OR CONDUIT? ? OR CANNULA? ?) OR INTRODUCER? ?
S4	1411704	S INCLINE OR INCLINES OR INCLINED OR INCLINING OR TILT OR TILTS OR TILTED OR TILTING OR SLANT OR SLANTS OR SLANTED OR SLANTING OR tip OR tips OR tipped OR tipping OR BEND OR BENDS OR BENT OR BENDING OR DEVIAT??? (2W) ("FROM") (1W) (PERPENDICULAR OR VERTICAL)
S5	1226626	S SLOPE OR SLOPES OR SLOPED OR SLOPING OR angle OR angleS OR angled OR angling
S6	821969	S DEGREE OR DEGREES
S7	5	S S1 AND S2 AND S3 (5N) S4:S6
S8	18	S S1(S) S2 AND S3(S) S4:S6
S9	13	S S8 NOT S7

7/25,K/2 (Item 2 from file: 350)

Fulltext available through: [Order File History](#)

Derwent WPIX

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0015491983 & & *Drawing available*

WPI Acc no: 2006-056109/200606

Related WPI Acc No: 2005-171781; 2006-056108

XRPX Acc No: N2006-048427

Introducer for implanting paddle style electrical stimulation lead, has outer sheath to accommodate insertion of lead, and inner penetrator with tip end having shape and size conforming to shape and size of guide wire

Patent Assignee: DAGLOW T (DAGL-I); HEGI P B (HEGI-I); HICKMAN T K (HICK-I); JONES T S (JONE-I); ADVANCED NEUROMODULATION SYSTEMS INC (ADNE-N)

Inventor: DAGLOW T; DAGLOW T D; HEGI P B; HICKMAN T K; JONES T S; HEGI P; HICKMAN T; JONES T

Patent Family (4 patents, 112 & countries)

Patent Number	Kind	Date	Update	Type
US 20050288759	A1	20051229	200606	B
WO 2006119135	A2	20061109	200674	E
EP 1877129	A2	20080116	200807	E
US 7359755	B2	20080415	200828	E

Priority Applications (no., kind, date): US 2003637342 A 20030808; US 2005119438 A 20050429

Alerting Abstract US A1

NOVELTY - The introducer (10) has an outer sheath to accommodate insertion of a paddle style electrical stimulation lead. An inner penetrator has a tip end with a shape and size conforming to a shape and size of a guide wire (46) accommodated in a channel. The penetrator is advanced along the wire to a desired location relative to a nerve tissue and removed from the sheath leaving the sheath in position for insertion of the lead.

DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

a method of implanting a paddle style electrical stimulation lead to enable electrical stimulation of nerve tissue

a system for implanting a paddle style electrical stimulation lead for electrical stimulation of a human's spinal nerve tissue.

USE - Used for implanting a paddle style electrical stimulation lead (claimed).
 ADVANTAGE - The introducer allows the paddle style electrical stimulation lead to be inserted using a minimally invasive procedure rather than a partial laminectomy or more invasive surgical procedure. The introducer enables the electrical stimulation of the human's spinal nerve tissue. The transition region of the tip end provides a smooth transition between the tip end and the guide wire, thus eliminating the likelihood of the juncture between the end and the wire getting stuck or caught up as the penetrator is advanced within the body.
 DESCRIPTION OF DRAWINGS - The drawing shows an example of an introducer being inserted over a guide wire into a human's epidural space.
 10 Introducer
 40 Epidural space
 42 Spinous processes
 43 Vertebrae
 46 Guide wire

Claims: ...of the inner penetrator at least a portion of the distance toward the body region of the inner penetrator, and during the advancement of the introducer along the guide wire, the tip transition region flexes to substantially follow flexures in the guide wire, the tip transition region being formed from a particular material and having a wall...

7/25,K/3 (Item 3 from file: 350)

Fulltext available through: [Order File History](#)

Derwent WPIX

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0015298693 & & *Drawing available*

WPI Acc no: 2005-648867/200566

XRPX Acc No: N2005-531632

Piercing device for cortical wall, has notches enabling shaft distal end to assume curved configuration as distal end is advanced into cancellous bone of vertebral body when shaft is unrestrained

Patent Assignee: SENNETT A R (SENN-I); SOTEIRA INC (SOTE-N)

Inventor: SENNETT A R; SENNETT A

Patent Family (3 patents, 108 & countries)

Patent Number	Kind	Date	Update	Type
US 20050216018	A1	20050929	200566	B
WO 2005094368	A2	20051013	200568	E
EP 1758507	A2	20070307	200720	E

Priority Applications (no., kind, date): US 2004557246 P 20040329; US 200591232 A 20050328

Alerting Abstract US A1

NOVELTY - The piercing device (100) includes a shaft (102) having a distal end formed with side notches (104). The shaft has sufficient strength and rigidity to pierce the cortical wall of the vertebral body, when it is restrained. The notches enable the distal end of the shaft to assume a curved configuration as the distal end is advanced into the cancellous bone of the vertebral body, when the shaft is unrestrained.

USE - For piercing cortical wall and initiating access to the cancellous interior of a vertebral body via minimally invasive, percutaneous approach to the vertebral body.

ADVANTAGE - Facilitates access to both sides of the vertebral body from a single access point.

DESCRIPTION OF DRAWINGS - The figure shows the side elevation view of the piercing device.

100 Piercing device

102 Shaft
104 Side notches
105 tip

Original Abstracts: The present invention provides instrumentation that facilitates access to both sides of the vertebral body from a single access point. More particularly, the present invention provides bendable access devices that can be steered so as to traverse the vertebral body from the point of entry into the vertebral body, through the cancellous bone within the vertebral body, and to the contralateral side of the vertebral body. This steerability is provided by forming the access device with a series of slots, grooves, or notches in the side of the access device near the distal end of the access device, which slots, grooves, or notches reduce the bending stiffness of the access device. As a result, the distal end of the access device bends as it is being advanced into the vertebral body...

Claims: 1. A device for piercing the cortical wall and initiating access to the cancellous interior of a vertebral body via minimally invasive, percutaneous approach to the vertebral body, said device comprising: a shaft having a proximal end and a distal end with a first series of notches or slots in a side... .. said distal end, wherein said shaft has sufficient strength and rigidity, when restrained, to remain essentially straight and to pierce the cortical wall of said vertebral body, and wherein bending stiffness of said shaft is reduced in the region of said first series of notches or slots such that, when said shaft is unrestrained, said distal end of said shaft assumes a curved configuration as said distal end is advanced into the cancellous bone of the vertebral body.

7/25,K/4 (Item 4 from file: 350)

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0015056583 & & *Drawing available*

WPI Acc no: 2005-404612/200541

Related WPI Acc No: 2005-479399

XRPX Acc No: N2005-328328

Minimally invasive delivery of spinal fixation element involves manipulating access device to second position that is angled with respect to first orientation to position spinal fixation element into spinal anchor

Patent Assignee: ANDERSON D G (ANDE-I); ROSS G J (ROSS-I); SELOVER S P (SELO-I); SICVOL C W (SICV-I)

Inventor: ANDERSON D G; ROSS G J; SELOVER S P; SICVOL C W

Patent Family (1 patents, 1 & countries)

Patent Number	Kind	Date	Update	Type
US 20050131421	A1	20050616	200541	B

Priority Applications (no., kind, date): US 2003738130 A 20031216

Alerting Abstract US A1

NOVELTY - The method involves advancing a spinal fixation element through the lumen in a percutaneous access device (12) in first position that is parallel to the longitudinal axis of the access device. The access device can be manipulated to a second position that is angled with respect to first orientation to position the spinal fixation element into a spinal anchor (50).

DESCRIPTION - An INDEPENDENT CLAIM is included for a percutaneous access device.

USE - For delivering spinal fixation element to spinal anchor site in minimally invasive manner.

ADVANTAGE - Enables the access device to be positioned at several angles with respect to the patient's spinal column. Reduce amount of trauma caused to the patient and minimize

damage to the muscle surrounding the surgical site.

DESCRIPTION OF DRAWINGS - The figure is the perspective view of the percutaneous access device.

12 Percutaneous access device

12a,12b Proximal and distal ends of access device

14 Opening

50 Spinal anchor

Original Abstracts: Minimally invasive methods and devices for introducing a spinal fixation element into a surgical site in a patient's spinal column are provided. In general, the method involves advancing a spinal fixation element in a first, lengthwise orientation along a pathway extending from a minimally invasive percutaneous incision to a spinal anchor site. As the spinal fixation element approaches the spinal anchor site, the fixation element can be manipulated to extend in a second orientation, which is preferably substantially transverse to the first orientation, to position the fixation element in relation to one or more spinal anchors.

Claims: 1. A minimally invasive method for delivering a spinal fixation element to a spinal anchor site, comprising: percutaneously delivering a spinal anchor to a vertebral body with a percutaneous access device mated thereto, the percutaneous access device including a lumen extending therethrough and defining a longitudinal axis; advancing a spinal fixation element through the lumen in the percutaneous access device in a first orientation substantially parallel to the longitudinal axis of the percutaneous access device; and manipulating the spinal fixation element to extend in a second orientation angled with respect to the first orientation to position the spinal fixation element in relation to the spinal anchor.

7/25,K/5 (Item 5 from file: 350)

Fulltext available through: [Order File History](#)

Derwent WPIX

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0012266066 & *Drawing available*

WPI Acc no: 2002-206288/200226

XPX Acc No: N2002-157102

Spinal disorder treatment apparatus for advancing and retarding medical instrument within introducer device to area of vertebra disc intended for treatment

Patent Assignee: ARTHRO CARE CORP (ARTH-N); ARTHROCARE CORP (ARTH-N)

Inventor: EGGERS P E; HOVDA D C; MARTINI B; ORMSBY T C; QUACKENBUSH J J; SHARPS L; THAPLIYAL H V; WOLOSZKO J

Patent Family (7 patents, 93 & countries)

Patent Number	Kind	Date	Update	Type
WO 2002011635	A1	20020214	200226	B
AU 200161637	A	20020218	200244	E
EP 1309282	A1	20030514	200333	E
US 6602248	B1	20030805	200353	E
JP 2004505663	W	20040226	200416	E
US 7070596	B1	20060704	200644	E
US RE40156	E	20080318	200822	E

Priority Applications (no., kind, date): US 1995485219 A 19950607; US 1996690159 A 19960718; US 1997990374 A 19971215; US 199826851 A 19980220; US 199854323 A 19980402; US 199926851 A 19990220; US 1999268616 A 19990315; US 1999295687 A 19990421; US 1999316472 A 19990521; WO 2000US13706 A 20000517; US 2000224107 P 20000809; US 2000676194 A 20000928; US 2000679394 A 20001003; US 2003682600 A 20031009

Alerting Abstract WO A1

NOVELTY - The shaft (902) of a probe (900) is inserted to the nucleus pulposus of a disc with at least one fissure in the annular using an introducer needle (928) to obtain a minimally invasive percutaneous procedure. The shaft includes an active electrode (910) on the distal end (902a) that can be rotated through 180 degrees in order to scan a larger volume of the pulposus.

DESCRIPTION - INDEPENDENT CLAIMS are included for:

an electrosurgical probe and introducer needle combination;

an electrode for an electrosurgical probe;

a method of treating an inter-vertebral disc.

USE - Treatment of spinal disorders using adjustable electrode.

ADVANTAGE - Achieving minimally invasive treatment.

DESCRIPTION OF DRAWINGS - The drawing shows translation of a curved shaft of an electrosurgical probe.

900 Probe

902 Shaft

910 Electrode

Original Abstracts: ...a second proximal curve (926). The length of the distal linear portion and the angle of the first curve determine the position of the distal tip within a lumen of the introducer device, such that the distal tip occupies a substantially central transverse location within the lumen and the distal tip avoids contact with the introducer device. The length of the inter-curve portion and the angle of the second curve determine deflection of the distal tip from a longitudinal axis...

Claims: What is claimed is:1. A method of treating an inter-vertebral disc, comprising:a) contacting at least a first region of a nucleus pulposus of the inter-vertebral disc with at least one active electrode of an electrosurgical system, the at least one active electrode disposed on a shaft of an electrosurgical probe...

9/3/12 (Item 12 from file: 350)

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0014925752 & *Drawing available*

WPI Acc no: 2005-273458/200528

Related WPI Acc No: 2005-253322

XRAM Acc no: C2005-085670

XRPX Acc No: N2005-224601

Surgical access device for spinal surgery, includes distal portion, and passage having prosthetic spinal disc implant inserted to interbody space

Patent Assignee: DIPOTO G (DIPO-I); ENDIUS INC (ENDI-N)

Inventor: ANDERSON S; BAKER D; DIPOTO G; ROSSIN V; SHLUZAS A

Patent Family (5 patents, 107 & countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 2005032358	A2	20050414	WO 2004US33088	A	20041004	200528	B
US 20050090822	A1	20050428	US 2003693815	A	20031024	200530	E
US 20050090833	A1	20050428	US 2003693663	A	20031024	200530	E
US 20050090899	A1	20050428	US 2003693250	A	20031024	200530	E
EP 1691668	A2	20060823	EP 2004794435	A	20041004	200655	E
			WO 2004US33088	A	20041004		

9/25,K,/1 (Item 1 from file: 350)

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0017891909 & & *Drawing available*

WPI Acc no: 2008-H12248/200845

XRPX Acc No: N2008-565909

Intervertebral disc replacement device for stabilizing spinal column, comprises coiled wire having specified diameter for placement in intervertebral space, where the coiled wire is formed of inert biocompatible and elastic material

Patent Assignee: PARRISH R G (PARR-I)

Inventor: PARRISH R G

Patent Family (2 patents, 120 & countries)

Patent Number	Kind	Date	Update	Type
US 20080154381	A1	20080626	200845	B
WO 2008079331	A2	20080703	200845	E

Priority Applications (no., kind, date): US 2006643536 A 20061221; US 200812985 A 20080206

Alerting Abstract US A1

NOVELTY - An intervertebral disc replacement device (600) for stabilizing a portion of a spinal column having intervertebral spaces, comprises a coiled wire having a diameter of 0.5-2 mm for placement in one of the intervertebral spaces, where the coiled wire is formed of an inert biocompatible and elastic material. The coiled wire is uniform so as to form a hollow cylinder. The coiled wire has a length of 30 cm to 4 m. The coiled wire is formed of a material that comprises titanium, or a material having a Young's Modulus of 15000000-17500000 psi. The coiled wire is capable of deforming up to 7%.

DESCRIPTION - An INDEPENDENT CLAIM is included for stabilizing a portion of a spinal column, involving introducing the intervertebral disc spacer between two vertebrae using an introducer tool; and placing the intervertebral disc spacer between two vertebrae.

USE - As an intervertebral disc replacement device for stabilizing a portion of a spinal column having intervertebral spaces (claimed); useful to improve stability, flexibility and proper anatomical motion of the spinal column.

ADVANTAGE - The coiled wire disc replacement device of inert biocompatible and elastic material, improves stability, flexibility and proper anatomical motion of the spinal column. The device allows for preservation of spinal function and preservation of the intervertebral disc itself. The spacer devices have varying degrees of compressibility thus allowing for absorption and distribution of forces exerted by adjacent vertebrae. The method allows intervertebral disc spacer device to be inserted into the disc space via minimally invasive techniques.

DESCRIPTION OF DRAWINGS - The figure shows a schematic view of a coiled wire disc replacement device placed in its environment between two vertebrae.

61, 62 Adjacent vertebral end plates

67 Annulus fibrosus walls

600 Disc replacement device.

9/25,K,/2 (Item 2 from file: 350)

Fulltext available through: [Order File History](#)

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0017624338 & & *Drawing available*

WPI Acc no: 2008-E44784/200830

XRAM Acc no: C2008-147151

XRPX Acc No: N2008-347879

Pedicle access device for use during spinal instrumentation and fusion surgery, has knob of targeting needle secured to handle of positioning needle, and pointed tip extending out of specially configured end of hollow rod

Patent Assignee: MI4SPINE LLC (MIFO-N)

Inventor: PEREZ-CRUET M J

Patent Family (1 patents, 1 & countries)

Patent Number	Kind	Date	Update	Type
US 20070270896	A1	20071122	200830	B

Priority Applications (no., kind, date): US 2006408571 A 20060421

Alerting Abstract US A1

NOVELTY - The device (10) has a positioning needle (12) with a handle (14) and a hollow rod (16) attached to the handle, where the hollow rod has a specially configured tip (40) for engaging a facet complex of a vertebra. A targeting needle (22) has a knob (26) and a rod (28), where the rod extends through the hollow tube of the positioning needle. The knob of the targeting needle is removably secured to the handle of the positioning needle. A pointed tip (42) i.e. trocar tip, of the rod extends out of the specially configured end of the hollow rod.

USE - Used for docking onto a complex facet of an articular process of a vertebra, during spinal instrumentation and fusion surgery.

ADVANTAGE - The tip of the targeting needle allows the positioning needle to be accurately positioned on the pedicle. The tip allows the positioning needle to be securely held in place in the pedicle so that wire is properly positioned, thus reducing injury to the neural elements of the spine, without slipping.

DESCRIPTION OF DRAWINGS - The drawing shows a side view of a pedicle access device.

10 Pedicle access device

12 Positioning needle

14 Handle

16 Hollow rod

18 Threaded holes

22 Targeting needle

26 Knob

28 Rod

34 Ridges

40 Specially configured tip

42 Pointed tip

Original Abstracts: A pedicle access device that has particular application for positioning a pedicle screw during a minimally invasive spinal fusion surgical procedure. The pedicle access device includes a positioning needle having a hollow tube and a specially designed tip that conforms with a facet complex of a vertebra proximate a pedicle. A targeting needle having a pointed end is inserted through the hollow tube of the positioning needle, and is secured thereto so the tip of the targeting needle extends out of the end of the positioning needle. The tip of the targeting needle allows the positioning needle to be accurately positioned on the pedicle, and the specially configured tip of the positioning needle allows it to be secured thereto without slipping. ...

Claims: ...said rod extending through the hollow tube of the positioning needle, said second handle being removably secured to said first handle, and wherein a pointed tip of the rod extends out of the specially configured end of the hollow tube.

9/25,K,/3 (Item 3 from file: 350)

Fulltext available through: [Order File History](#)

Derwent WPIX

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0017318208 & *Drawing available*

WPI Acc no: 2008-B38649/200809

Related WPI Acc No: 2008-A16893

XRPX Acc No: N2008-108199

Spine treating method for e.g. reducing chronic back pain, involves inserting flexible puller member through passages, and pulling spinal fixation element into position adjacent spinal locations using flexible puller member

Patent Assignee: ENDIUS INC (ENDI-N)

Inventor: ANDERSON S J; ~~DIPOTO G F~~

Patent Family (1 patents, 1 & countries)

Patent Number	Kind	Date	Update	Type
US 20080015582	A1	20080117	200809	B

Priority Applications (no., kind, date): US 2006812703 P 20060609; US 2007760569 A 20070608

Alerting Abstract US A1

NOVELTY - The method involves advancing an access device (100) having a passage into a patient such that a distal end of the access device is adjacent to a spinal location. Another access device having a passage is advanced into the patient such that a distal end is adjacent to a spinal location. A flexible puller member e.g. wire, is coupled to a spinal fixation element (140) e.g. rod. The flexible puller member is inserted through the passages. The spinal fixation element is pulled into a position adjacent to the spinal locations using the flexible puller member.

DESCRIPTION - An INDEPENDENT CLAIM is also included for a spinal fixation assembly for use in a spinal fixation procedure.

USE - Method for treating the spine of a patient for performing less invasive and/or minimally invasive surgery to reduce chronic back pain or correct spinal deformities.

ADVANTAGE - The method allows reducing the trauma of a posterior spinal surgery by reducing the size of the incision and the degree of muscle stripping to access the vertebrae. The method requires less surgical time, and reduces the need for fluoroscopy and image-guided assistance.

DESCRIPTION OF DRAWINGS - The drawing shows a schematic illustration of a method and assembly for percutaneously performing one-level spinal procedure.

100 Access device

110 Expandable distal portion

130 Rod delivery channels

140 Spinal fixation element

150 Fasteners

160 Rod inserter

9/25,K,/4 (Item 4 from file: 350)

Fulltext available through: [Order File History](#)

Derwent WPIX

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0016947977 & *Drawing available*

WPI Acc no: 2007-663043/200762

XRPX Acc No: N2007-518813

Bone graft e.g. autograft, inserter for use during spine fusion surgery on patient, has cannulated body with tapered tip, defining central cannula for housing bone portion, and plunger inserted into cannulated body

Patent Assignee: PRUSMACK C J (PRUS-I)

Inventor: PRUSMACK C J

Patent Family (1 patents, 1 & countries)

Patent Number	Kind	Date	Update	Type
US 20070213655	A1	20070913	200762	B

Priority Applications (no., kind, date): US 2006779947 P 20060307; US 2007683385 A 20070307

Alerting Abstract US A1

NOVELTY - The inserter (10) has a cannulated body with tapered tip (2), extending along a longitudinal axis from a proximal end to a distal end and defining a central cannula for housing bone portions comprising autograft or allograft. The cannula includes a distal orifice adjacent to the distal end. A threaded portion (7) is advanced through a screw mechanism (6) for causing movement of a plunger (5) for inserting the plunger into the cannulated body. The plunger is rotatably advanced along the longitudinal axis to expel the bone portions from the distal orifice.

USE - Used for inserting bone graft such as autograft and allograft to fuse adjacent vertebrae, during spine fusion surgery on a patient.

ADVANTAGE - The tapered tip allows easy and safe introduction of the bone graft into a freshly evacuated disc space to either augment or substitute for an interbody implantation. The inserter allows positioning of the bone through the minimally invasive access cannula safely, thus avoiding risk of injury and preventing messy introduction of the bone in unwanted area such as epidural space, muscle and nerve.

DESCRIPTION OF DRAWINGS - The drawing shows a bone graft inserter.

- 1 Orifice
- 2 tip
- 3, 4 Handles
- 5 Plunger
- 6 Screw mechanism
- 7 Threaded portion
- 8 Top portion
- 10 Inserter

9/25,K,/5 (Item 5 from file: 350)

Fulltext available through: [Order File History](#)

Derwent WPIX

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0016923209

WPI Acc no: 2007-638275/200760

XRPX Acc No: N2007-498477

Minimally invasive tissue e.g. dilate tissue, expander system for surgical site, has tissue expander with arms adapted to bear against tissue, and outer sleeve with lumen sized and shaped to receive expander in one position

Patent Assignee: DZIEDZIC S (DZIE-I); PELLEGRINO R (PELL-I); SELOVER S (SELO-I)

Inventor: DZIEDZIC S; PELLEGRINO R; SELOVER S

Patent Family (1 patents, 1 & countries)

Patent Number	Kind	Date	Update	Type
US 20070208366	A1	20070906	200760	B

Priority Applications (no., kind, date): US 2006368022 A 20060303

Alerting Abstract US A1

NOVELTY - The system has a tissue expander with arms (40) that are adapted to bear against tissue, where the arms are coupled to an actuating member (30) at one end and to a shaft of the tissue expander at another end. The movement of the actuating member relative to the shaft adjusts the arms between two positions with two diameters, where one diameter is greater than another diameter. An outer sleeve has a lumen sized and shaped to receive the tissue expander in one position.

DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

a tissue expander system kit for expanding tissue at surgical site
a method of creating a minimally invasive pathway to a vertebral body.

USE - Used for expanding tissue e.g. dilate tissue, skin or muscle, at a surgical site, in minimally invasive surgical procedures by a surgeon.

ADVANTAGE - The tissue expander and the outer sleeve are simultaneously removed or inserted to remove the expander system, thus leaving an access device such as expandable

retractor, in place to easily create the pathway to the surgical site.

DESCRIPTION OF DRAWINGS - The drawing shows a perspective view of a tissue expander in an unexpanded configuration.

30 Actuating member

40 Arms

50 Handle

60 Linkages

70 tip

72 Blunt edged blades

9/25,K,/7 (Item 7 from file: 350)

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0016406578 & & *Drawing available*

WPI Acc no: 2007-122750/200712

XRPX Acc No: N2007-086202

Expandable access device for providing access to surgical site in body of patient, has long members having ends pivotally coupled to two blades, at corresponding pivot points, in which blades distal ends are movable relative to each other

Patent Assignee: SCHWER S (SCHW-I); SYNTHES GMBH (SYNT-N); SYNTHES USA (SYNT-N)

Inventor: SCHWER S

Patent Family (3 patents, 114 & countries)

Patent Number	Kind	Date	Update	Type
US 20070027364	A1	20070201	200712	B
WO 2007016289	A1	20070208	200713	E
EP 1909653	A1	20080416	200829	E

Priority Applications (no., kind, date): US 2005193807 A 20050728

Alerting Abstract US A1

NOVELTY - The device includes two long members having ends pivotally coupled to two blades (2,4), at corresponding pivot points (24,26,28,30), in which the distal ends of the blades are movable relative to each other.

DESCRIPTION - An INDEPENDENT CLAIM is also included for an access device insertion method.

USE - For providing access to surgical site in body of patient, during minimally-invasive surgery on patient's spine.

ADVANTAGE - Requires minimal skin incision when accessing surgical site within patient's body, thus reducing amount of trauma to patient's body. Simplifies operation and handling of device.

DESCRIPTION OF DRAWINGS - The figure shows the front view of the expandable access device.

2,4 Blades

24,26,28,30 Pivot points

Original Abstracts:... have a first portion, a second portion and an intermediate portion between the first and second portions. The intermediate portions of each blade may be bent such that the first and second portions of each blade may be at an angle with respect to each other. The connection mechanism may have first and second elongated member, which may be in a criss-cross configuration. A first...

9/25,K,/8 (Item 8 from file: 350)

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0016194532 & & *Drawing available*

WPI Acc no: 2006-726173/200675

XRPX Acc No: N2006-570988

Performing a nucleoplasty for treating intervertebral disc problems involves providing and activating elongated thermal or electromagnetic probe having a proximal end, a distal end and having a guidable region adjacent the distal end

Patent Assignee: SHERWOOD SERVICES AG (SHES)

Inventor: JOHNSON K D; PODHAJSKY R J

Patent Family (1 patents, 1 & countries)

Patent Number	Kind	Date	Update	Type
US 20060224219	A1	20061005	200675	B

Priority Applications (no., kind, date): US 2005666827 P 20050331; US 2006391900 A 20060329

Alerting Abstract US A1

NOVELTY - Performing a nucleoplasty involves: providing an elongated thermal or electromagnetic probe (104) having a proximal end, a distal end and having a guidable region (128) adjacent the distal end (112); introducing the guidable region into a nucleus of an intervertebral disc; activating the probe; increasing the amplitude of the activated probe until an effect is obtained on the nervous system; noting the amplitude at which the effect on the nervous system is observed; and re-activating the probe to treat the nucleus.

DESCRIPTION - Performing a nucleoplasty involves: providing an elongated thermal or electromagnetic probe (104) having a proximal end, a distal end and having a guidable region (128) adjacent the distal end (112); introducing the guidable region into a nucleus of an intervertebral disc; activating the probe; increasing the amplitude of the activated probe until an effect is obtained on the nervous system; noting the amplitude at which the effect on the nervous system is observed; and re-activating the probe to treat the nucleus. The probe is activatable up to the amplitude that is dictated by a threshold amplitude of the nervous system stimulation. An INDEPENDENT CLAIM is included for a method of using neural stimulation during nucleoplasty procedures for confirming the placement of a probe in a nucleus of an intervertebral disc.

USE - For performing a nucleoplasty and to methods of using neural stimulation during nucleoplasty procedures for confirming the placement of a probe in a nucleus pulposus of an intervertebral disc (Claimed). For treating intervertebral disc problems using percutaneous techniques and to treat/destroy body tissue in any body cavity or tissue locations that are accessible by percutaneous or endoscopic catheters or open surgical techniques.

ADVANTAGE - The method provides an alternate and/or improved method of confirming the placement of an apparatus (e.g., a thermal probe) in an intervertebral disc targeted for treatment of intervertebral disc disorders e.g. degenerative discs with localized tears or fissures in the annulus fibrosus, localized disc herniations with contained extrusions, and chronic, circumferential bulges. The method does not require the need for major surgical intervention. The apparatus and method enable simple, minimally-invasive, percutaneous, out-patient treatment or intradiscal pain without the need for open surgery as e.g. discectomies or spinal stabilization using plates, screws, and other instrumentation hardware; and are relatively simple and relatively economical. Compared to open surgery, the treatment of the disc by percutaneous electrode placement represents only a procedure of a few hours with minimal hospitalization, and with minimal morbidity to the patient and open surgical procedures often require full anesthetic, extensive operating room time, and longer hospital and home convalescence.

DESCRIPTION OF DRAWINGS - The figure shows a schematic illustration of an intervertebral apparatus in a disassembled condition.

102 an introducer cannula

104 thermal or electromagnetic probe

106 a power source

108 a rigid tubular cannula shaft
112 a distal end portion
122 an elongated member
128 a guidable region
136 etchings or markings indicating to the user the degree of extension of guidable region from cannula.

9/25,K,/9 (Item 9 from file: 350)

Fulltext available through: [Order File History](#)

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0015939766 & *Drawing available*

WPI Acc no: 2006-471432/200648

XPX Acc No: N2006-384819

Minimally invasive portal system for performing lumbar decompression, has retractor devices positioned concentrically within access tube

Patent Assignee: LINS L E (LINS-I); LINS R E (LINS-I); SIMOVITCH H (SIMO-I)

Inventor: LINS L E; LINS R E; SIMOVITCH H

Patent Family (1 patents, 1 & countries)

Patent Number	Kind	Date	Update	Type
US 20060142642	A1	20060629	200648	B

Priority Applications (no., kind, date): US 2004639936 P 20041229; US 2005323002 A 20051229

Alerting Abstract US A1

NOVELTY - Several retractor devices (16) are placed concentrically within an access tube (12). Each retractor device has a top and bottom regions (18,22) aligned at a predetermined angle relative to the central region (20). The bottom region protrudes beneath the access tube into the body of the patient. The top region having a detachable post (30) and a handle (32), protrudes external to the body of the patient.

DESCRIPTION - An INDEPENDENT CLAIM is also included for minimally invasive method for performing medical or surgical procedure.

USE - For performing lumbar decompression, instrumented fusion/stabilization of cervical spine of patient and animal.

ADVANTAGE - The minimally invasive portal system provides enhanced access to treatment area of the patient. The portal system is easily inserted and is removed.

DESCRIPTION OF DRAWINGS - The figure shows a side sectional view of the minimally invasive portal system.

12 access tube
16 retractor device
18 top region
20 central region
22 bottom region
30 post
32 handle

Original Abstracts: ...adjusting the cross-sectional area of the access tube and one or more retaining clips for securing the one or more retractor devices to the access tube in a fixed position.

9/25,K,/10 (Item 10 from file: 350)

Fulltext available through: [Order File History](#)

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0015561033 & *Drawing available*

WPI Acc no: 2006-125189/200613
Related WPI Acc No: 2006-156016
XRPX Acc No: N2006-108312

Dilation introducer for orthopedic surgery, has locked assembled configuration for placement of dilation introducer against patient's bone tissue, and unlocked configuration for dilating patient's soft tissue down to target bone tissue

Patent Assignee: BOOMER M C (BOOM-I); CULBERT B (CULB-I); WARREN C (WARR-I)

Inventor: BOOMER M C; CULBERT B; WARREN C

Patent Family (1 patents, 1 & countries)

Patent Number	Kind	Date	Update	Type
US 20060030872	A1	20060209	200613	B

Priority Applications (no., kind, date): US 2004911215 A 20040803

Alerting Abstract US A1

NOVELTY - The introducer has locked assembled configuration for placement of dilation introducer against patient's bone tissue, and unlocked, collapsed configuration for dilating patient's soft tissue down to target bone tissue to desired degree of dilation to permit minimally invasive surgical procedures on patient's bone tissue.

DESCRIPTION - An INDEPENDENT CLAIM is also included for method for dilating patient's soft tissue down to bone tissue to be treated in orthopedic surgery.

USE - Dilation introducer for orthopedic surgery, and also for implantation of bone fixation devices, dilation of soft tissue for percutaneous, minimally invasive surgical procedures such as nephrostomy, neurosurgery, heart valve repair or replacement, gastrointestinal surgery such as gall bladder or gall stone surgery, hernia removal, transjugular intrahepatic portal-systemic shunt (TIPS) procedures for treatment of liver.

ADVANTAGE - Minimizes trauma and improves patient recovery.

DESCRIPTION OF DRAWINGS - The figure shows the plan view of the dilation introducer.

32,53,72 dilator tubes

42,62 spaced apart rings

80 handle

90 locking clip

151 wire

Original Abstracts: The dilation introducer has a locked assembled configuration for placement of the dilation introducer against a patient's bone tissue to be treated, and an unlocked, collapsed configuration for dilating the patient's soft tissue down to the bone tissue to be treated to a desired degree of dilation to permit minimally invasive surgical procedures on the patient's bone tissue to be treated. Dilator tubes are successively released and advanced to progressively expand the patient's soft tissue down to the bone tissue to be treated. A method for a minimally invasive procedure utilizing the telescoping dilation introducer to insert a bone fixation device into a patient's spine for posterior spine fusion is also provided.

Claims: 1. A dilation introducer for orthopedic surgery, the dilation introducer having a locked assembled configuration for initial placement of the dilation introducer against a patient's bone tissue to be treated, and an unlocked, collapsed configuration dilating the patient's soft tissue down to the bone tissue to be treated to a desired degree of dilation to permit minimally invasive surgical procedures on the patient's bone tissue to be treated, comprising: a first dilator tube having a distal end and a proximal end, the distal end having a tapered tip; a second dilator tube, the first dilator tube being removably received in the second dilator tube for slidable telescoping movement within the second dilator tube, the second dilator tube having a distal end and a proximal end, an inner lumen with a distal opening and a proximal opening, the distal end having a tapered tip; and means for removably connecting the first and second dilator tubes together in a locked configuration, whereby in the locked configuration the distal end of the first dilator tube can be pressed against... tube is permitted to slidably telescope over the first dilator tube to dilate the patient's soft tissue at the distal

end of the dilation introducer.>

9/25,K,/11 (Item 11 from file: 350)

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0015129866 & & *Drawing available*

WPI Acc no: 2005-479399/200548

Related WPI Acc No: 2005-404612

XRPX Acc No: N2005-390244

Method for delivering spinal fixation component, involves manipulating Spinal fixation component to extend in second orientation angled with respect to first orientation to position spinal fixation component in relation to spinal anchor

Patent Assignee: DEPUY SPINE INC (DEPU-N)

Inventor: ANDERSON D; ANDERSON D G; ROSS G; ROSS G J; RUBERTE R; SELOVER S; SELOVER S P; SHEEHY N; SHEEHY N M; SICVOL C; SICVOL C W; RUBERTE R A

Patent Family (9 patents, 107 & countries)

Patent Number	Kind	Date	Update	Type
WO 2005060534	A2	20050707	200548	B
US 20050154389	A1	20050714	200548	E
EP 1694225	A2	20060830	200657	E
AU 2004304934	A1	20050707	200680	E
BR 200417589	A	20070320	200723	E
JP 2007513739	W	20070531	200737	E
CN 1893882	A	20070110	200740	E
KR 2007029650	A	20070314	200755	E
MX 2006006783	A1	20070401	200777	E

Priority Applications (no., kind, date): US 2003738130 A 20031216; US 2004711704 A 20040930

Alerting Abstract WO A2

NOVELTY - Spinal fixation component is advanced through a lumen (12c) in percutaneous access device (12) in first orientation parallel to longitudinal axis (L) of percutaneous access device. The spinal fixation component is then manipulated to extend in second orientation angled with respect to first orientation to position the spinal fixation component in relation to a spinal anchor (50).

DESCRIPTION - The spinal anchor is percutaneously delivered to a vertebral body with the percutaneous access device mated with the spinal anchor. The percutaneous access device includes the lumen extending through the percutaneous access device and defining the longitudinal axis. INDEPENDENT CLAIMS are also included for the following:

a minimally invasive surgical method;

a percutaneous access device for introducing spinal fixation component to patient's body;

a dissection tool for separating muscles; and

a medical device kit.

USE - For delivering spinal fixation component in minimally invasive manner to spinal anchor site within patient's spine.

ADVANTAGE - Reduces amount of trauma caused to patient. Minimizes damage to muscle surrounding the surgical site.

DESCRIPTION OF DRAWINGS - The figure is the perspective view of the percutaneous access device coupled to spinal anchor.

12 Percutaneous access device

12c Lumen

50 Spinal anchor

52 Head

54 Threaded shank

L Longitudinal axis

Original Abstracts: Minimally invasive methods and devices for introducing a spinal fixation element into a surgical site in a patient's spinal column are provided. In one embodiment, a dissection tool is provided for separating muscles along a muscle plane without causing damage to the muscles. The... .. tool can also include a lumen extending therethrough for receiving a guide wire. The tool allows the guide wire to be positioned relative to a vertebra, and once properly positioned, the tool can be removed to allow a spinal anchor to be delivered along the guide wire and implanted into the vertebra. ...

Claims: 1. A minimally invasive surgical method, comprising: forming an incision through tissue located adjacent to a vertebra in a patient's spinal column; identifying a muscle plane; inserting a substantially planar blunt tip of a tool through the incision while manipulating the blunt tip along the muscle plane extending between the incision and the vertebra to separate the muscles.

9/25,K,/13 (Item 13 from file: 350)

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0010957219 & & *Drawing available*

WPI Acc no: 2001-580350/200165

XPX Acc No: N2001-432124

Tip assembly for steerable catheter, has two wear resistant sleeve sections linked together by bridge and individually receive legs of steering wire

Patent Assignee: BON E (BONE-I); NARDEO M (NARD-I)

Inventor: BON E; NARDEO M

Patent Family (1 patents, 1 & countries)

Patent Number	Kind	Date	Update	Type
US 20010025134	A1	20010927	200165	B

Priority Applications (no., kind, date): US 2000189416 P 20000315; US 2001809334 A 20010315

Alerting Abstract US A1

NOVELTY - A bridged steering wire sleeve comprises of two wear resistant sleeve sections, and a bridge extending between the sleeves. The wear resistant sleeve sections individually receive the legs (128,130) of a steering wire. The legs individually extend from the lumens that contain the steering wire. Each sleeve section is made from a tubular element.

DESCRIPTION - An INDEPENDENT CLAIM is also included for a bridged steering wire sleeve element.

USE - For enabling physician to introduce steerable catheter into epidural space of patient's spine.

ADVANTAGE - Allows physician to directly visualize epidural space in patient's spine, or treat patient's disease in minimally invasive manner, since physician can access catheter into epidural space. Enables steering wire to resist pull through forces. Prevents sudden detachment of steering wire from catheter shaft. Improves catheter flexibility, without sacrificing steering wire pull through resistance function. Enables catheter tip to be steered in one or more planes. Catheter can be used with other equipment e.g. drapes, syringe, needles, introducer set, video system.

DESCRIPTION OF DRAWINGS - The figure shows the plan view of the internal structure of the steerable catheter.

128,130 Legs

[File 350] Derwent WPIX 1963-2008/UD=200849
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[File 347] JAPIO Dec 1976-2007/Dec(Updated 080328)
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Set	Items	Description
S1	479362	S (ACCESS OR INSERTER? ? OR CANNULA? ?) NOT (ACCESS() (DEVICE? ? OR INSTRUMENT? ? OR APPARATUS? ? OR ASSEMBLY OR ASSEMBLIES OR CONDUIT? ? OR CANNULA? ?) OR INTRODUCER? ?)
S2	38423	S SPINE OR SPINAL OR VERTEBRA? ?
S3	4320	S MINIMALLY() INVASIVE OR (KEYHOLE OR NONINVASIVE OR NON() INVASIVE OR MINIMAL OR MINIMAL() ACCESS) () (SURGERY OR SURGICAL() PROCEDURE? ?)
S4	1029330	S INCLINE OR INCLINES OR INCLINED OR INCLINING OR TILT OR TILTS OR TILTED OR TILTING OR SLANT OR SLANTS OR SLANTED OR SLANTING OR TIPPED OR TIPPING OR BEND OR BENDS OR BENT OR BENDING OR DEVIAT??? (2W) ("FROM") (1W) (PERPENDICULAR OR VERTICAL)
S5	1226626	S SLOPE OR SLOPES OR SLOPED OR SLOPING OR ANGLE OR ANGLES OR ANGLED OR ANGLING
S6	821969	S DEGREE OR DEGREES
S7	32	S S1(S)S4:S6 AND S2 AND S3
S8	0	S IC=AA61?
S9	69948	S MC=(B04-F01 OR B04-N02 OR B11-C04 OR D09-C01D)
S10	1496376	S IC=A61?
S11	3	S S7 AND S9
S12	32	S S7 AND S10
S13	29	S S12 NOT S11

13/25,K/8 (Item 8 from file: 350)

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0015752912 & *Drawing available*

WPI Acc no: 2006-314685/200633

XRPX Acc No: N2006-267527

Spinal disorder treating device has hollow delivery cannula with curved passage through which probe travels outward at prescribed angle with respect to longitudinal axis of cannula

Patent Assignee: ANULEX TECHNOLOGIES INC (ANUL-N)

Inventor: ATKINSON R E; KEITH P T

Patent Family (1 patents, 1 & countries)

Patent Number	Kind	Date	Update	Type
US 20060084994	A1	20060420	200633	B

Priority Applications (no., kind, date): US 2000542972 A 20000404; US 200293990 A 20020307; US 2004967042 A 20041015; US 2005285257 A 20051122

Alerting Abstract US A1

NOVELTY - A probe attached to the advancer, advances outward from the distal end of a hollow delivery cannula. The probe travels through a curved passage within the cannula and advances outward at an angle between 30 and 150(deg) with respect to the longitudinal axis of the cannula in which the passage restricts travel of the probe with respect to the perpendicular axis of the cannula to prevent rotation of the probe.

USE - For treating spinal disorders associated with the intervertebral disc in the lumbar region of the adult human spinal column and for minimally invasive implantation methods.

ADVANTAGE - Significantly reduces/eliminates back pain while maintaining near normal anatomical motion. Effectively eliminates nerve impingement associated with a damaged disc, and/or reinforces a damaged disc while permitting relative movement of the vertebrae adjacent the damaged disc.

DESCRIPTION OF DRAWINGS - The figure shows the left lateral view of the intervertebral disc disposed between adjacent vertebrae.

20_i inferior adjacent vertebrae
20_s superior adjacent vertebrae
50 intervertebral disc
56 disc protrusion

13/25,K/9 (Item 9 from file: 350)

Fulltext available through: [Order File History](#)

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0015721228 & & *Drawing available*

WPI Acc no: 2006-284457/200629

XRPX Acc No: N2006-242727

Minimally-invasive surgical method for fusing adjacent upper and lower vertebrae, involves percutaneously inserting shearing tool over long shank section of primary screw, before using shearing tool to shear long shank section

Patent Assignee: CLEVELAND CLINIC FOUND (CLEV-N)

Inventor: LIEBERMAN I H; LIEBERMAN I

Patent Family (4 patents, 110 & countries)

Patent Number	Kind	Date	Update	Type
WO 2006038957	A1	20060413	200629	B
US 20060084977	A1	20060420	200629	E
EP 1819282	A1	20070822	200757	E
US 7396360	B2	20080708	200847	E

Priority Applications (no., kind, date): US 2004952654 A 20040929

Alerting Abstract WO A1

NOVELTY - The method involves percutaneously inserting a shearing tool (7) over the long shank section of a primary screw (200), before using the shearing tool to shear the long shank section (210) to form an accessible head portion that lies above the lamina surface of the upper vertebrae.

DESCRIPTION - An INDEPENDENT CLAIM is also included for a facet joint fusing apparatus.

USE - For fusing adjacent upper and lower vertebrae to treat congenital and degenerative spinal disorders in human.

ADVANTAGE - Ensures reliable and strong fusing of upper and lower vertebrae.

DESCRIPTION OF DRAWINGS - The figure shows the isometric view of the facet joint fusing apparatus.

7 Shearing tool

16 Fixation block

20 Rod

200 Primary screw

210 Long shank section

Original Abstracts: The present invention is a minimally invasive surgical method for fusing adjacent vertebrae. A first K-wire (12) is inserted into the spinous process of an upper vertebrae. A second K-wire (14) is inserted into a transverse process of a lower vertebrae. A first fixation block (16) is secured to the first K-wire and a second fixation block (18) is secured to the second K-wire. A rod member (20) extends across the K-wires. A swivel block assembly (22) is secured to achieve a desired angle for a first axis along which a first screw will be implanted into a facet joint. The swivel block assembly is secured at a desired axial position on the rod member. Percutaneous access to the upper vertebrae along the first axis is then obtained via a cannula (28). A removable screw (200) having a threaded section (206) for implantation across the facet joint and an elongated shank section (210) that is shearable subcutaneously is inserted through the cannula. The threaded section is implanted along the first axis across the facet joint to

attach the upper and lower vertebrae. A shearing tool (7) is inserted percutaneously over the shank section and the shank section is sheared off...

Claims: Having described the invention, I claim: 1. A minimally invasive surgical method for fusing adjacent upper and lower vertebrae, said method comprising the steps of: providing an apparatus comprising first and second K-wires, first and second fixation blocks, a swivel block having relatively movable first and second block members, a rod member extending between the fixation blocks and the first block member, and a cannula extending from the second block member; inserting the first K-wire into the spinous process of the upper vertebrae; inserting the second K-wire into the transverse process on a first side of the lower vertebrae; securing the first fixation block to the first K-wire and the second fixation block to the second K-wire with the rod member extending across the K-wires; securing the second block member of the swivel block assembly relative to the first block member to achieve a desired angle for a first axis along which a first screw will be implanted into the facet joint on the first side; securing the swivel block assembly at a desired axial position on the rod member; obtaining percutaneous access along the first axis to a second side of the upper vertebrae via the cannula; providing a first one removable screw for insertion into the cannula, the first screw having a threaded section for implantation across the facet joint to promote fusion of the adjacent vertebrae and an elongated shank section that is shearable subcutaneously following implantation; inserting the first screw through the cannula; implanting the threaded section of the first screw along the first axis across the facet joint on the first side to attach the upper and lower vertebrae; percutaneously inserting a shearing tool over the elongated shank section of the first screw; and shearing the elongated shank section of the first screw with the shearing tool to form an accessible head portion of the shank section that lies above the surface of the lamina of the upper vertebrae....

13/25,K/10 (Item 10 from file: 350)

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0015307478 & *Drawing available*

WPI Acc no: 2005-657660/200567

Related WPI Acc No: 2003-440593; 2003-556815; 2005-065269; 2005-272782

XRPX Acc No: N2005-538872

Working channel creation method for performing minimal invasive surgery, involves passing implant through lateral passage formed in distal end of cannula after removing dilator

Patent Assignee: DEPUY SPINE INC (DEPU-N)

Inventor: SIMONSON R E

Patent Family (1 patents, 1 & countries)

Patent Number	Kind	Date	Update	Type
US 20050216002	A1	20050929	200567	B

Priority Applications (no., kind, date): US 200121809 A 20011030; US 200530218 A 20050106

Alerting Abstract US A1

NOVELTY - A dilator (12) is extended from proximate a vertebra to external to the skin incision. A dilator retractor (30) or a cannula is inserted over the dilator. The dilator is removed so that the bore of cannula defines a working channel from skin incision to proximate the vertebra. An implant is passed through a lateral passage formed in the distal end of cannula.

DESCRIPTION - An INDEPENDENT CLAIM is also included for a method of positioning an implant relative to a bone anchor.

USE - For creating working channel from skin incision to proximate vertebra when performing minimal invasive surgery

ADVANTAGE - Enables surgeon to perform surgical procedure while providing sufficient

opening to permit the use of microscope and lighting to view the area of target. Provides opportunities to surgeon to operate in areas of spine that are not operable with minimal invasive surgery.

DESCRIPTION OF DRAWINGS - The figure shows the exploded perspective view of a non-cannulated dilator, a series of graduated increased diameter dilators and the cannula or dilator retractor.

12 Dilator

14 Non-cannula dilator

16 Solid body

24 Tool engaging end portion

30 Dilator retractor

Original Abstracts: A dilator retractor and the dilators that are used for minimally invasive spinal surgery or other surgery are configured to accommodate the anatomical structure of the patient as by configuring the cross sectional area in an elliptical shape, or by forming a... .. end is contoured to also accommodate the anatomical structure of the patient so that a cylindrically shaped, funnel shaped, ovoid shaped dilator retractor can be sloped or tunneled to accommodate the bone structure of the patient or provide access for implants. The dilator retractor is made with different lengths to accommodate the depth of the cavity formed by the dilators.

Claims: 1. A method of creating a working channel from a skin incision to proximate a vertebra, comprising: making a skin incision; inserting a distal end of a dilator into the skin incision; advancing the distal end of the dilator into proximity to a vertebra, the dilator extending from proximate the vertebra to external to the skin incision; inserting a cannula over the dilator; removing the dilator, a bore of the cannula defining a working channel from the skin incision to proximate the vertebra; and passing an implant through a lateral passage formed in the distal end of the cannula.

13/25,K/11 (Item 11 from file: 350)

Fulltext available through: [Order File History](#)

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0015214645 & & *Drawing available*

WPI Acc no: 2005-564675/200557

XRPX Acc No: N2005-462713

Surgical instrument system used in spinal fusion surgery, has filler bar engaging shaft and paddle of distractor, so that distractor is inserted between adjacent vertebrae in first orientation and rotated to distract adjacent vertebrae

Patent Assignee: DEPUY SPINE INC (DEPU-N)

Inventor: BEARDSLEY T; BIRKMEYER P; DZIEDZIC S; FRANK D; MAHONEY M; NAUGHTON R

Patent Family (5 patents, 107 & countries)

Patent Number	Kind	Date	Update	Type
WO 2005077288	A1	20050825	200557	B
EP 1713408	A1	20061025	200670	E
AU 2005212352	A1	20050825	200707	E
JP 2007521886	W	20070809	200754	E
US 20070276406	A1	20071129	200780	E

Priority Applications (no., kind, date): US 2004543030 P 20040209; US 2007579146 A 20070222

Alerting Abstract WO A1

NOVELTY - The paddle (22) is arranged at the distal end (12b) of the shaft (14) of distractor (12). A filler bar shaped to removably engage the shaft and the paddle of the distractor, provides rigidity and torque strength, so that the distractor is inserted

between the adjacent vertebrae in first orientation and rotated to distract the adjacent vertebrae.

DESCRIPTION - An INDEPENDENT CLAIM is also included for minimally invasive surgical method.

USE - For implanting spinal prostheses in spinal fusion surgery especially invasive surgery, of patients suffering form severe back pain.

ADVANTAGE - The implant holder is rotated to desired angle. Prevents migration of the distractor during distraction.

DESCRIPTION OF DRAWINGS - The figure shows a side perspective view of the distractor assembly.

12 distractor

12b distal end of shaft

14 shaft

16 modular handle

22 paddle

Original Abstracts: Disclosed herein are methods and devices for distracting adjacent vertebrae during surgical procedures for implanting spinal prostheses. In an exemplary embodiment, a distractor is disclosed that maintains the empty space between adjacent vertebrae following a discectomy, and that can removably mate with other surgical instruments, such as, for example, a filler bar, an implanting tool, or a funnel. In other embodiments of the present invention a distractor is disclosed having various features to assist in implanting a spinal prosthesis, such as, for example, an angled distal end and/or an expandable paddle. In another embodiment of the present invention, an articulating inserter is disclosed. Moreover, various implants and funnels are also disclosed herein...

Claims: ...the filler bar is engaged to the distractor, the filler bar provides rigidity and torque strength so that the distractor can be inserted between adjacent vertebrae in a first orientation and rotated to distract the adjacent vertebrae.>

13/25,K/12 (Item 12 from file: 350)

Fulltext available through: [Order File History](#)

Derwent WPIX

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0015018543 & & *Drawing available*

WPI Acc no: 2005-366506/200537

XRAM Acc no: C2005-112736

Interconnection of first and second longitudinal members extending along spinal column of patient involves connecting first and second ends of transverse connector to first and second longitudinal members, respectively, using access port

Patent Assignee: ENDIUS INC (ENDI-N)

Inventor: SWEENEY T

Patent Family (2 patents, 106 & countries)

Patent Number	Kind	Date	Update	Type
WO 2005041863	A2	20050512	200537	B
US 20050107789	A1	20050519	200537	E

Priority Applications (no., kind, date): US 2003513013 P 20031021; US 2004969124 A 20041020

Alerting Abstract WO A2

NOVELTY - First and second longitudinal members (12) extending along a spinal column of a patient are interconnected by inserting an access port into a body of the patient; moving a transverse connector (10) through the access port; connecting a first end (30) of the transverse connector to the first longitudinal member; and connecting a second end (44)

of the transverse connector to the second longitudinal member.

DESCRIPTION - An INDEPENDENT CLAIM is also included for a device for providing access to a surgical location within a patient, comprising an elongate body having a proximal portion, a distal portion and an inner surface that defines a first passage extending through the elongate body. The first passage is capable of having a configuration for surgical instruments to be inserted to the surgical location. The elongate body has a second passage extending through the inner surface and transverse to the first passage. The second passage is capable of having the surgical instrument inserted through the second passage.

USE - For interconnecting first and second longitudinal members, e.g. rods, extending along a spinal column of a patient.

ADVANTAGE - The inventive method effectively interconnects the first and second longitudinal members extending along the spinal column during a minimally invasive surgery. The transverse connector blocks relative movement of the rods so that vertebrae (V) connected to the rods are maintained in their desired relative positions and do not pivot relative to an anterior/posterior axis or a longitudinal central axis of the spinal column. It increases the torsional strength of the rod construct to provide stability when the spinal column twists, such as when the shoulders are turned or angled relative to the legs in a standing position.

DESCRIPTION OF DRAWINGS - The figure is an enlarged plan view of transverse connectors interconnecting a pair of longitudinal members that are connected to a spinal column.

10 Transverse connector

12 First and second longitudinal members

30 First end of the transverse connector

44 Second end of the transverse connector

V Vertebrae

Technology Focus INSTRUMENTATION AND TESTING - Preferred Method: The method further includes expanding a portion of the access port or expanding a distal portion of the access port; providing the distal portion of the access port with an opening or a recess; covering the opening in the distal portion of the access port with a door; pivoting the door relative to the access port to uncover the opening; extending an instrument through the opening or recess; removing tissue to create a passage from one side of a mid-line of the spinal column to another side of the mid-line of the spinal column; extending the transverse connector through the passage; angling the access port obliquely; connecting a tether to the transverse connector; extending the tether through the access port and the passage from one side of the mid-line of the spinal column to another side of the mid-line of the spinal column; pulling the tether through the passage to pull the transverse connector into the passage; removing the tether from the transverse connector after the transverse connector is pulled into the passage; inserting a second access port into the body of the patient; extending the tether through the second access port; moving a first fastener through the access port; securing the first fastener to a first vertebra of the spinal column; moving a second fastener through the access port; securing the second fastener to a second vertebra of the spinal column; moving the first longitudinal member through the access port; connecting the first longitudinal member to the first and second fasteners; inserting a second access port into the body of the patient; moving a third fastener through the second access port; securing the third fastener to the first vertebra of the spinal column; moving a fourth fastener through the second access port; securing the fourth fastener to the second vertebra of the spinal column; moving the second longitudinal member through the second access port; and connecting the second longitudinal member to the third and fourth fasteners. Preferred Component: A covering member covers the second passage, and is movable to uncover the second passage. The elongate body has a contracted configuration for insertion into the patient and an expanded configuration for providing access to the surgical location. A cross-sectional area of the first passage at a first location of the elongate body is greater than a cross...

Original Abstracts: A method of interconnecting first and second longitudinal members extending along a spinal column of a patient includes inserting an access port into the body of the patient. A transverse connector is moved through the access port. A first end of the...

Claims: 1. A method of interconnecting first and second longitudinal members extending along a spinal column of a patient, said method comprising: inserting an access port into a body of the patient; moving a transverse connector through the access port; connecting a first end...

13/25,K/15 (Item 15 from file: 350)

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0014345064 & & *Drawing available*

WPI Acc no: 2004-533269/200451

XRPX Acc No: N2004-422374

Bodily tissue e.g. intervertebral disc manipulating method, involves advancing advancer in cannula and causing probe to advance from curved passage at angle relative to axis of cannula such that probe tip manipulates tissue

Patent Assignee: BANKS T (BANK-I); EINHORN J (EINH-I); LAMBRECHT G H (LAMB-I); MOORE R K (MOOR-I); REDMOND R J (REDM-I); VIDAL C A (VIDA-I); INTRINSIC THERAPEUTICS INC (INTR-N)

Inventor: BANKS T; EINHORN J; LAMBRECHT G H; MOORE R K; REDMOND R J; VIDAL C A

Patent Family (2 patents, 1 & countries)

Patent Number	Kind	Date	Update	Type
US 20040133229	A1	20040708	200451	B
US 7144397	B2	20061205	200680	E

Priority Applications (no., kind, date): US 2000642450 A 20000818; US 2001298605 P 20010614; US 200120507 A 20011211; US 2003742156 A 20031219

Alerting Abstract US A1

NOVELTY - The method involves locating an opening in an outer layer and inserting a distal end of a cannula in the opening of the outer layer. An advancer is advanced within the cannula and a probe unit (20) is advanced outward from a curved passage at an angle between 30 and 150 degrees relative to a long axis of the cannula such that a probe tip (80) travels and manipulates tissue parallel to the intersection of the tissue.

USE - Used for diagnosing and treating intervertebral disc tissue of a spinal cord.

ADVANTAGE - The probe unit forming the probe tip can be used to dissect a path to enable the insertion of an implant in the created space, thereby providing a minimally invasive access pathway into the posterior annulus and/or nucleus of a vertebral disc, thus avoiding harm to the spinal cord.

DESCRIPTION OF DRAWINGS - DESCRIPTION OF DRAWING - The drawing shows a cross sectional view of a device depicts the probe advancing relative to its starting position.

20 Probe unit

70 Depth stop

80 Probe unit

310 Annulus

320 Nucleus

Original Abstracts: ...present invention relates generally to intervertebral disc devices and methods and instrumentation for intervertebral disc procedures. An intervertebral disc repair and diagnostic device that is minimally invasive, actively guided, and provides direct and consistent access to the inner surface of the posterior anulus, which will not unintentionally exit the posterior anulus and cause harm to the spinal cord, is provided...

Claims: ...comprising: locating an opening in the outer layer; inserting within said opening to a point past the outer layer a distal end of a hollow cannula, said cannula having a proximal end and a distal end and having an elongated longitudinal axis, said cannula slideably housing an advancer coupled to a probe member, said probe member having a proximal end connected to the advancer and said distal end of... a tip, said distal end of the probe member capable of being advanced and retracted through a curved slot at the distal end of the cannula via longitudinal movement of the advancer within said cannula; and advancing the advancer within the cannula and causing the probe member to be advanced outward from the curved passage at an angle between 30 and 150 degrees relative to the long axis of the cannula such that the probe tip travels and manipulates tissue parallel to the intersection of the tissue with the definable outer layer of tissue... layer of the same or different bodily tissue, the method comprising: locating an opening in the outer layer, wherein said outer layer comprises bony or spinal tissue; inserting within said opening to a point past the outer layer a distal end of a hollow cannula, said cannula having a proximal end and a distal end and having an elongated longitudinal axis, said cannula slideably housing an advancer coupled to a probe member, said probe member having a proximal end connected to the advancer and said distal end of....

13/25,K/16 (Item 16 from file: 350)

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0014231560 & & *Drawing available*

WPI Acc no: 2004-417495/200439

Related WPI Acc No: 2003-468072; 2005-381592; 2005-629582; 2008-F48664

XPX Acc No: N2004-331141

Minimally invasive surgical instrument for endoscopy e.g. laparoscopy, has end effector pivotally mounted on opposed end of wrist member to rotate around wrist axis of wrist member and moved relative to wrist member

Patent Assignee: INTUITIVE SURGICAL INC (INTU-N)

Inventor: MORLEY T A; WALLACE D T

Patent Family (1 patents, 1 & countries)

Patent Number	Kind	Date	Update	Type
US 6746443	B1	20040608	200439	B

Priority Applications (no., kind, date): US 2000626527 A 20000727

Alerting Abstract US B1

NOVELTY - An end effector (58), pivotally mounted on opposed end of a wrist member (52) to rotate around the wrist axis of wrist member, is moved relative to the wrist member in at least one additional degree of freedom including rotation around a pitch axis that is non-parallel to the wrist axis. The wrist axis extends between the proximal portion and distal portion of wrist member.

USE - For endoscopy e.g. laparoscopy.

ADVANTAGE - Offers versatile minimally invasive surgical instrument adaptable to access hard to reach locations with small entry points e.g. spinal, neural, or rectal surgical sites. Enables facilitation of bend back pitching while maintaining small size of tool for minimally invasive surgical applications.

DESCRIPTION OF DRAWINGS - The figure shows the perspective view of a roll-pitch-yaw wrist mechanism.

11,13 Free ends

19 Clevis

52 Wrist member

58 End effector

Original Abstracts: ...end effector renders the wrist mechanism more versatile and adaptable to accessing hard to reach locations, particularly with small entry points such as those involving spinal, neural, or rectal surgical sites.

13/25,K/18 (Item 18 from file: 350)

Fulltext available through: Order File History

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0013465274 & & Drawing available

WPI Acc no: 2003-556815/200352

Related WPI Acc No: 2003-440593; 2005-065269; 2005-272782; 2005-657660

XPX Acc No: N2003-442449

Dilator for performing surgical procedures e.g. laminotomy, has ovoid shaped outer surface inserted into access hole formed in patient, for stretching tissue adjacent to access hole in order to enlarge the hole

Patent Assignee: DEPUY SPINE INC (DEPU-N); SIMONSON R E (SIMO-I)

Inventor: SIMONSON R E

Patent Family (2 patents, 1 & countries)

Patent Number	Kind	Date	Update	Type
US 20030083688	A1	20030501	200352	B
US 7008431	B2	20060307	200618	E

Priority Applications (no., kind, date): US 200121809 A 20011030

Alerting Abstract US A1

NOVELTY - The dilator has a tool engaging surface (18) at its proximal end, a beveled portion (24) at its distal end and an ovoid shaped outer surface configured for insertion into an access hole formed in a patient. The dilator stretches the tissue adjacent to the access hole in order to enlarge the hole.

USE - Used as medical instrument for performing surgical procedures like laminotomy, medial facetectomy, aminotomy, and nerve root retraction.

ADVANTAGE - The configuration of the dilator retractors can take many shape namely cylinder, elliptical or even polygon shape. The thickness of the wall over the major portion of the dilator retractors is uniform.

DESCRIPTION OF DRAWINGS - The drawing shows an exploded view in perspective of the non cannulated dilator.

18 Tool engaging surface

24 Beveled portion

Original Abstracts: A dilator retractor and the dilators that are used for minimally invasive spinal surgery or other surgery are configured to accommodate the anatomical structure of the patient as by configuring the cross sectional area in an elliptical shape, or by forming a... .. end is contoured to also accommodate the anatomical structure of the patient so that a cylindrically shaped, funnel shaped, ovoid shaped dilator retractor can be sloped or tunneled to accommodate the bone structure of the patient or provide access for implants. The dilator retractor is made with different lengths to accommodate the depth of the cavity formed by the dilators...

Claims: I claim: 1. A cannula comprising: a proximal end; a distal end spaced apart a distance from the proximal end, the distal end being sloped such that the cannula has a short side and a long side; and a lumen extending from the proximal end to the distal end, the lumen defining a working channel having a length sufficient to at least span from a skin incision to proximate a vertebra;opposed cut-outs formed in the distal end and defining a lateral passageway oriented at an angle to the working channel, the opposed cut-outs being formed between the short side and the long side of the cannula.>

13/25,K/19 (Item 19 from file: 350)

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0013243020 & & *Drawing available*

WPI Acc no: 2003-328171/200331

XRPX Acc No: N2003-262446

Surgical tool guidance platform for use in minimally invasive percutaneous spinal surgery on prone patient, has two slidable cannula guide holders mounted on cross member between vertical supports

Patent Assignee: NU VASIVE INC (NUVA-N)

Inventor: AHLGREN D K; CHRISTOPHER T K; MARINO J F; MCKINLEY J T; STONE C W

Patent Family (1 patents, 1 & countries)

Patent Number	Kind	Date	Update	Type
US 6530930	B1	20030311	200331	B

Priority Applications (no., kind, date): US 199888663 P 19980609; US 1999120663 P 19990219; US 1999129703 P 19990416; US 1999326739 A 19990604; US 2001812026 A 20010319

Alerting Abstract US B1

NOVELTY - A pair of slidable cannula guide holders, positioned on a horizontal cross member (24) between a pair of vertical supports (20,22), retain the cannula guides. The holders keep the cannula guides coplanar to each other, even as each guide holder is moved along the cross member and the guide is rotated about an axis (32,34) perpendicular to and below the cross member.

USE - For positioning one or more surgical tools or instruments e.g. intervertebral inserts, within intervertebral plane passing between adjacent vertebrae of patient's spine. Used in performing minimally invasive percutaneous spinal surgery on prone lying patient.

ADVANTAGE - Allows surgical tools to be held at preferred angle while advancing or approaching towards patient's intervertebral space via cannulae.

DESCRIPTION OF DRAWINGS - The figure shows the perspective view of a surgical tool guidance platform.

20,22Vertical supports

24Cross member

32,34Axis

13/25,K/20 (Item 20 from file: 350)

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0013013522 & & *Drawing available*

WPI Acc no: 2003-091821/200308

XRPX Acc No: N2003-072756

Spine treatment device for intervertebral disc diagnosis, has probe that travels through curved passage within distal end of cannula and advances outwards at specified angle with respect to longitudinal axis of cannula

Patent Assignee: BANKS T (BANK-I); EINHORN J (EINH-I); INTRINSIC ORTHOPEDICS INC (INTR-N); INTRINSIC THERAPEUTICS INC (INTR-N); LAMBRECHT G H (LAMB-I); MOORE R K (MOOR-I); REDMOND R J (REDM-I); VIDAL C A (VIDA-I)

Inventor: BANKS T; EINHORN J; LAMBRECHT G H; MOORE R K; REDMOND R J; VIDAL C A

Patent Family (10 patents, 99 & countries)

Patent Number	Kind	Date	Update	Type
US 20020156530	A1	20021024	200308	B
WO 2002102233	A2	20021227	200311	E

EP 1404240	A2	20040407	200425	E
AU 2002315215	A1	20030102	200452	E
KR 2004065157	A	20040721	200474	E
US 6821276	B2	20041123	200478	E
JP 2005503847	W	20050210	200511	E
AU 2002315215	B2	20060323	200673	E
KR 604194	B1	20060725	200713	E
JP 2007111538	A	20070510	200732	E

Priority Applications (no., kind, date): US 2000642450 A 20000818; US 2001298605 P 20010614; US 200120507 A 20011211

Alerting Abstract US A1

NOVELTY - The proximal end (32) of a probe housed within delivery cannula (30) fit within an iatrogenic hole or naturally occurring lesion in an annulus fibrosus, is connected to an advancer and a distal end (34) is connected to a probe tip (50). The probe travels through a curved passage within the distal end of the cannula and advances outwards at an angle between 30-150(deg) with respect to longitudinal axis of the cannula.

DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

Method for manipulating tissue;

Method of measuring body cavity a tissue; and

Method of measuring dimension within disc.

USE - For intervertebral disc diagnosis and treatment.

ADVANTAGE - As the probe travels through the curved passage within the distal end of cannula and advances outward therefrom at specified angle with respect to longitudinal axis of cannula, the implants are passed along the probe into this desired position precisely without damaging the nearby tissues.

DESCRIPTION OF DRAWINGS - The figure shows the front view of the spine treatment device.

30 Delivery cannula

32 Proximal end

34 Distal end

50 Probe tip

Original Abstracts: ...present invention relates generally to intervertebral disc devices and methods and instrumentation for intervertebral disc procedures. An intervertebral disc repair and diagnostic device that is minimally invasive, actively guided, and provides direct and consistent access to the inner surface of the posterior annulus, which will not unintentionally exit the posterior annulus and cause harm to the spinal cord, is provided...

Claims: What is claimed is: 1. A device comprising: a hollow delivery cannula having a distal end and a proximal end, saidcannula dimensioned to fit within an iatrogenic hole or naturally occurring lesion in an annulus fibrosus; an advancer coupled to a probe member housed within said cannula, said probe member having a proximal end connected to said advancer and distal end connected to a probe tip, said probe member capable of being advanced outward from said distal end of said cannula; and a curved passage within said distal end of said cannula wherein said probe member travels through said passage and may be advanced outward therefrom at an angle between 30 and 150 degrees with respect to the longitudinal axis of the cannula and wherein the passage restricts travel of the probe with respect to the axis of the cannula substantially perpendicular to the longitudinal axis thereby preventing rotation of the probe.

13/25,K/21 (Item 21 from file: 350)

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0010869716 & & Drawing available

WPI Acc no: 2001-489066/200153

XRPX Acc No: N2001-361834

Device for providing access through series of adjacent spinal vertebrae has directional control mechanism to adjust boring angle from location outside trans-sacral axial bore as boring head is driven

Patent Assignee: AXIAMED INC (AXIA-N); TRANS1 INC (TRAN-N)

Inventor: CRAGG A H; KAGAN J

Patent Family (6 patents, 93 & countries)

Patent Number	Kind	Date	Update	Type
WO 2001060232	A2	20010823	200153	B
AU 200139763	A	20010827	200176	E
EP 1265538	A2	20021218	200301	E
JP 2003522575	W	20030729	200358	E
US 6790210	B1	20040914	200460	E
AU 2001239763	A8	20050915	200569	E

Priority Applications (no., kind, date): US 2000182748 P 20000216; US 2000709105 A 20001110

Alerting Abstract WO A2

NOVELTY - The device has an elongated, flexible drive shaft. A boring head is imaged at the drive shaft distal end. A drive motor is coupled to the shaft for driving the bore (152) head. A directional control mechanism adjusts the boring angle from a location outside the trans-sacral axial bore as the boring head is driven, and advances the boring head from an anterior or posterior target point through the vertebral bodies.

DESCRIPTION - An INDEPENDENT CLAIM is included for a method of providing access to series of adjacent vertebrae.

USE - Spinal surgery.

ADVANTAGE - Is minimally invasive and low trauma.

DESCRIPTION OF DRAWINGS - The drawing shows a partial cross section side view of the anterior axial bore.

152 Bore

Original Abstracts:Surgical apparatus for forming one or more curved axial bore commencing from an anterior or posterior sacral target point and cephalad through vertebral bodies in general alignment with a visualized, trans-sacral axial instrumentation/fusion (TASIF) line in a minimally invasive, low trauma, manner. An anterior axial instrumentation/fusion line (AAIFL) or a posterior axial instrumentation/fusion line (PAIFL) that extends from the anterior or posterior target point, respectively in the cephalad direction following the spinal curvature through one or more vertebral body is visualized by radiographic or fluoroscopic equipment. Generally curved anterior or posterior TASIF axial bores are formed in axial or parallel or diverging alignment... .. curved anterior or posterior TASIF axial bores can be made straight or relatively straight, and other sections thereof can be made curved to optimally traverse vertebral bodies and intervertebral spinal discs, if present... .. One or more curved axial bore is formed commencing from an anterior or posterior sacral target point and cephalad through vertebral bodies in general alignment with a visualized, trans-sacral axial instrumentation/fusion (TASIF) line in a minimally invasive, low trauma, manner. An anterior axial instrumentation/fusion line (AAIFL) or a posterior axial instrumentation/fusion line (PAIFL) that extends from the anterior or posterior target point, respectively, in the cephalad direction following the spinal curvature through one or more vertebral body is visualized by radiographic or fluoroscopic equipment. Generally curved anterior or posterior TASIF axial bores are formed in axial or parallel or diverging alignment...

Claims: What is claimed is: 5. A method for providing access to a series of adjacent vertebrae located within a human lumbar and sacral spine having an anterior aspect, a posterior aspect and an axial aspect, wherein the axial aspect is curved in the posterior-anterior plane due to curvature of the spinal column, the vertebrae separated by intact or damaged spinal discs, the method comprising the steps of: accessing an anterior or posterior sacral target point of a sacral vertebra in alignment with a visualized, curved axial instrumentation/fusion line extending in said axial aspect through the series of adjacent vertebral bodies; and from the accessed sacral target point, boring a plurality of trans-sacral axial bores through the vertebral bodies of said series of adjacent vertebrae and any intervertebral spinal discs, the plurality of trans-sacral axial bores commencing in substantial axial alignment with said axial instrumentation/fusion line at the anterior or posterior sacral target point and extending in the cephalad direction axially through the vertebral bodies of said series of adjacent vertebrae and any intervertebral spinal discs, each trans-sacral axial bore diverging away from the axial instrumentation/fusion line and any other axial bore and terminating at spaced apart cephalad...

13/25,K/22 (Item 22 from file: 350)

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0010868827 & & *Drawing available*

WPI Acc no: 2001-488078/200153

XRPX Acc No: N2001-361156

Method of interlocking, first and second inserts between adjacent vertebrae, by rotating the first insert to anchor it in position between the vertebrae, then introducing the second one and rotating it

Patent Assignee: NUVASIVE INC (NUVA-N)

Inventor: AHLGREN D K; MARINO J F

Patent Family (1 patents, 1 & countries)

Patent Number	Kind	Date	Update	Type
US 6251140	B1	20010626	200153	B

Priority Applications (no., kind, date): US 199886945 P 19980527; US 1998113651 P 19981223; US 1999120663 P 19990219; US 1999320236 A 19990526

Alerting Abstract US B1

NOVELTY - The method of interlocking first and second inserts (20,30) between adjacent vertebrae (50,52) comprises introducing the first insert between adjacent vertebrae; rotating the first insert to anchor the first insert into a fixed position between the adjacent vertebrae; introducing the second insert between the adjacent vertebrae; rotating the second insert to anchor the second insert into a fixed position between the adjacent vertebrae; and fastening the first insert to the second insert.

DESCRIPTION - The first and second vertebral inserts are separately introduced into the inter vertebral space between the adjacent vertebrae by percutaneously introduced cannulae, each cannula being positioned in a postero-lateral approach. The central longitudinally extending axes of the first and second inter vertebral inserts are positioned to be angled from 70 - 135 degrees from one another. The inserts are made from bio-absorbable material.

An INDEPENDENT CLAIM is given for a spinal support system.

USE - In spinal surgery, in cases where the patient's vertebral discs have degenerated, e.g. by ageing or trauma.

ADVANTAGE - Gives minimally invasive surgical technique.

DESCRIPTION OF DRAWINGS - The figures show an exploded front perspective view of the first and second interlocking intervertebral inserts, and a side elevation of the inserts.

20,30 inserts

29 fastener protrusion
32 dog-bone shape projection
40,42 vertical contact surface
50,52 adjacent vertebrae

Original Abstracts: A method of interlocking first and second inserts between adjacent vertebrae comprising: introducing the first insert between adjacent vertebrae; rotating the first insert to anchor the first insert into a fixed position between the adjacent vertebrae; introducing the second insert between the adjacent vertebrae; rotating the second insert to anchor the second insert into a fixed position between the adjacent vertebrae; and fastening the first insert to the second insert.

Claims: A method of interlocking first and second inserts in a patientprimes intervertebral space between adjacent vertebrae comprising: introducing the first insert between the adjacent vertebrae, the first insert having opposite vertebral contact surfaces; rotating the first insert about a first axis passing between the adjacent vertebrae in a path generally parallel to opposing ends of the adjacent vertebrae to position the vertebral contact surfaces adjacent to the adjacent vertebrae; introducing the second insert between the adjacent vertebrae, the second insert having opposite vertebral contact surfaces; rotating the second insert about a second axis disposed at an angle to the first axis to position the vertebral contact surfaces adjacent to the adjacent vertebrae, wherein, the central longitudinally extending axes of the first and second intervertebral inserts are positioned to be angled from 70 to 135(deg) apart from one another; andfastening the first insert to the second...

13/25,K/23 (Item 23 from file: 350)

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0010856935 & *Drawing available*

WPI Acc no: 2001-475791/200151

XRPX Acc No: N2001-352188

Intervertebral disc treating apparatus for medical application, has cannula with sufficient rigidity to advance within annulus fibrous of intervertebral disc in response to axial force exerted on proximal end

Patent Assignee: COSMAN E R (COSM-I); FINCH P P M (FINC-I); SHERWOOD SERVICES AG (SHES)

Inventor: COSMAN E; COSMAN E R; FINCH P P M

Patent Family (6 patents, 72 & countries)

Patent Number	Kind	Date	Update	Type
WO 2001045579	A1	20010628	200151	B
AU 200122691	A	20010703	200164	E
EP 1239787	A1	20020918	200269	E
JP 2003522566	W	20030729	200358	E
US 20040015218	A1	20040122	200407	E
AU 776685	B2	20040916	200479	E

Priority Applications (no., kind, date): US 1999171822 P 19991221; US 2000739428 A 20001218

Alerting Abstract WO A1

NOVELTY - Thermal probe (16) defines proximal and distal ends and has cannula (1) adjacent to distal end. The cannula has sufficient rigidity to advance within annulus fibrous of intervertebral disc relative to axial force exerted on proximal end while having sufficient flexibility to substantially follow and conform to azimuthal course defined by natural striata of annulus fibrous. The probe provides thermal energy to the fibrous to alleviate pain associated with intervertebral disc.

USE - For medical application for alleviating back pains.

ADVANTAGE - Enables to place a cannula in posterior or posterior lateral portion of disc, since cannula is curved and is sufficiently rigid to advance within annulus fibrous. Enables surgeon to get additional information on positioning of cannula and enables to receive indication of degree of desiccation, power rise, boiling or charring, that take place near electrode, by monitoring impedance of cannula and thermal probe as it is positioned within disc. Enables simple, minimally invasive, percutaneous, out-patient treatment of interdiscal pain without the need for open surgery e.g. discectomies or spinal stabilization using plates, screws and other instrumentation hardware.

DESCRIPTION OF DRAWINGS - The figure shows the intervertebral disc treating apparatus.

13/25,K/24 (Item 24 from file: 350)

Fulltext available through: [Order File History](#)

Derwent WPIX

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0010754279 & *Drawing available*

WPI Acc no: 2001-367598/200138

XRPX Acc No: N2001-268203

Screw delivery system lit for providing minimally invasive portal with small entry angle to surgical site, e.g. for human spine operations

Patent Assignee: SASSO R (SASS-I); SDGI HOLDING INC (SDGI-N); SDGI HOLDINGS INC (SDGI-N)

Inventor: SASSO R

Patent Family (10 patents, 93 & countries)

Patent Number	Kind	Date	Update	Type
WO 2001037744	A2	20010531	200138	B
AU 200139696	A	20010604	200153	E
US 6287313	B1	20010911	200154	E
US 20010027320	A1	20011004	200161	E
EP 1248568	A2	20021016	200276	E
US 6562046	B2	20030513	200335	E
JP 2003514611	W	20030422	200336	E
EP 1248568	B1	20030917	200369	E
DE 60005403	E	20031023	200377	E
AU 778352	B2	20041202	200506	E

Priority Applications (no., kind, date): US 1999448361 A 19991123; US 2001876397 A 20010607

Alerting Abstract WO A2

NOVELTY - The screw delivery system comprises an outer cannula, a guide (140), and various interventional devices such as bone drill bits and taps as well as an implant driver for inserting a screw.

DESCRIPTION - An INDEPENDENT CLAIM is also included for a method of inserting a screw into a bone through a minimally invasive portal.

USE - For providing minimally invasive portal with small entry angle to surgical site.

ADVANTAGE - Enables insertion of screw in a minimal incision.

DESCRIPTION OF DRAWINGS - The figure shows a side view of a guide for insertion into the outer cannula for directing the bone drill bits and taps.

140 guide

Original Abstracts ... taps as well as an implant driver for inserting a screw. The method disclosed varies by indication, but is ordinarily intended for use as a minimally invasive procedure which is a combination of percutaneous and open techniques wherein a small midline incision is made over a surgical site and the screw delivery system provides a percutaneous portal through an incision distant from the small midline incision...

Claims: What is claimed: 1. A screw delivery system kit for providing a minimally invasive portal with a small entry angle to a surgical site, comprising: an outer cannula having a first exterior surface and a first interior surface defining a bore, the first interior surface having a first inner diameter and the first... .. the surfaces extending along a first length on a first axis between a first proximal end having a first stop and a first distal end; a trocar having a second exterior surface with a second outer diameter, the second exterior surface extending along a second length on a second axis between a second proximal end having a second stop and a second distal end defining a blunt tip... .. third axis between a third stop at the third proximal end and the third distal end, the handle being connected to the tube at an angle to the third axis; and a bone drill bit having a fourth exterior surface with a fourth outer diameter extending along a fourth length on... .. A screw delivery system kit for providing a minimally invasive portal with a small entry angle to a surgical site, comprising: an outer cannula having a first exterior surface and a first interior surface defining a bore, the first interior surface having a first inner diameter and the first... .. proximal end having a first stop and a first distal end; a trocar having a second exterior surface with a second outer diameter, the second exterior surface extending along a second length on a second axis between a second proximal end having a second stop and a second distal end defining a blunt tip; a guide having a handle and a tube, the tube having a third exterior... .. third axis between a third stop at the third proximal end and the third distal end, the handle being connected to the tube at an angle to the third axis; anda bone drill bit having a fourth exterior surface with a fourth outer diameter extending along a fourth length on

13/25,K/25 (Item 25 from file: 350)

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0010716352 & *Drawing available*

WPI Acc no: 2001-327217/200134

XRPX Acc No: N2001-235309

Spinal surgery instrument guidance platform has cannula guides that remain coplanar with one another when each of the guides are rotated about axis perpendicular to longitudinal axis extending through member

Patent Assignee: NUVASIVE INC (NUVA-N)

Inventor: AHLGREN D K; CHRISTOPHER T K; MARINO J F; MCKINLEY J T; STONE C W

Patent Family (1 patents, 1 & countries)

Patent Number	Kind	Date	Update	Type
US 6221082	B1	20010424	200134	B

Priority Applications (no., kind, date): US 199888663 P 19980609; US 1999120663 P 19990219; US 1999129703 P 19990416; US 1999326739 A 19990604

Alerting Abstract US B1

NOVELTY - The cannula guides (40,42) are suspended from the holders (26,28) suspended from a cross member (24). The cannula guides remain coplanar with one another both when each of the guides are rotated about an axis perpendicular to a longitudinal axis extending through the cross member and when each of the holders are translated in a direction parallel to the longitudinal axis extending through the cross member.

DESCRIPTION - An INDEPENDENT CLAIM is also included for a method of positioning a cannula along a path in a patient's intervertebral plane.

USE - Used for positioning a cannula along a path in a patient's intervertebral plane. Used when performing minimally invasive percutaneous spinal surgery on a prone lying patient.

ADVANTAGE - Enables supporting operating cannulae in the preferred intervertebral plane passing between any two selected vertebrae. Enables passing various surgical instruments

and intervertebral inserts through the cannulae and into the patient's intervertebral space in a preferred posterolateral approach. Enables the simultaneous position of the surgical instruments with respect to one another and with respect to the patient's spine. DESCRIPTION OF DRAWINGS - The figure shows the perspective view of the guidance platform showing directions and angles of movement of various system components.

24 Cross member

26,28 Holders

40,42 Cannula guides

Original Abstracts: A spinal surgery system having a base, a cross member suspended from the base, and a pair of cannula guides suspended from the cross member, wherein the...

Claims: A spinal surgery instrument guidance platform, comprising: a base; a cross member suspended from the base; and a pair of cannula guide holders suspended from the cross member, a...

13/25,K/26 (Item 26 from file: 350)

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0010341213 & & *Drawing available*

WPI Acc no: 2000-656406/200063

XPX Acc No: N2000-486601

Segmented link intervertebral implant system for promoting arthrodesis has elongated component dimensioned to pass through holes of intervertebral implants

Patent Assignee: NUVASIVE INC (NUVA-N)

Inventor: MARINO J F; STONE C W

Patent Family (3 patents, 90 & countries)

Patent Number	Kind	Date	Update	Type
WO 2000062719	A1	20001026	200063	B
AU 200042387	A	20001102	200107	E
US 6387130	B1	20020514	200239	E

Priority Applications (no., kind, date): US 1999129703 P 19990416; US 2000549779 A 20000414

Alerting Abstract WO A1

NOVELTY - Intervertebral implants (20A-20C), individually provided with a hole, are positioned in a patient's intervertebral space. An elongated component (30), such as wire, string, cord, tether, or suture, is dimensioned to pass through the hole of each intervertebral implant to hold together the intervertebral implants.

DESCRIPTION - An INDEPENDENT CLAIM is also included for a method for positioning intervertebral implants in intervertebral space of patient.

USE - For promoting arthrodesis.

ADVANTAGE - Ensures easy positioning of intervertebral implants between two vertebral end plates around the curved periphery of the patient's intervertebral space. Degree of curvature of exhibited by C-shped assembly can be selected by selecting implants which are dimensioned with their ends being disposed at preferred angles. Can be deployed through a narrow operating cannula. Permits the placement of load supporting implant assembly over a large area between two of patient's vertebrae. Suitable for introduction to patient with minimally invasive surgical procedure. Attains reduction of required amount of vertebral distraction and tissue dissection, thus surgical time, complexity and trauma to patient are also reduced.

DESCRIPTION OF DRAWINGS - The figure shows a diagram showing the method of placement of the intervertebral implants.

20A-20C Intervertebral implants
30 Elongated component